Perfect Udder® COMBIPASTEURIZERS

Owner Manual

COMBI Models: 10G, 30G, 60G



DairyTech® INCORPORATED

rev102015

COMBIPASTEURIZERS

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Models: 10G, 30G, 60G

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DairyTech® INCORPORATED

For parts list and ordering
visit www.dairytechinc.com

You may also see the last pages of this user manual.

Contact Dairy Tech, Inc.

Dairy Tech, Inc.
34824 CR 29
Greeley, CO 80631

Toll Free:	**1-866-384-2697**
Local:	**1-970-674-1888**
Fax:	**1-970-686-5871**
Hours:	**M – F 7am – 4pm, MST**
Web:	**www.DairyTechInc.com**
eMail:	**office@DairyTechInc.com**

CE DECLARATION OF CONFORMITY

Industrial Milk Pasteurizer

DT30W:	~ 120 V, 1 ph, PE, 50/60 Hz, up to 10 A
	(~240 V, 2 ph, PE, 50/60 Hz, up to 50 A heater circuit)
COMBI 10G/10GEU:	**~200-240 V, 1 phase, PE, 50/60 Hz, up to 15 A total**
DT30W-EU:	**~240 V, 1 ph, PE, 50/60 Hz, up to 10 A**
	(~240 V, 1 ph, PE, 50/60 Hz, up to 30 A heater circuit)

Year of Issue:	**2015**
Applicable Directives:	• 2006/95/EC - Low Voltage Directive - Laws for electrical equipment within certain voltage limits • 89/336/EEC - EMC Directive - Laws relating to electromagnetic compatibility
Applicable Standards:	• EN 61010-1: 1998 Safety requirements for electrical equipment for measurement, control, and laboratory use – Part 1: General requirements • EN 55011: 1998 Limits and methods of measurement of radio disturbance characteristics of industrial, scientific and medical (ISM) radio-frequency equipment. (Group 2, Class A) • EN 61000-6-2: 1999 Electromagnetic Compatibility – Generic Standards – Immunity for • Industrial Environments

NOTE:

1. This equipment must be installed and used in accordance with the conditions of use described in the user manual.
2. If this equipment is modified without the permission or direction of Dairy Tech, this declaration is no longer valid.
3. EMC compliance is only for that equipment listed above. If this equipment is expanded, modified or installed into a larger system, the user is responsible to guarantee the EMC compliance of the overall system. If this equipment is used with external components, the user must insure that EMC and safety requirements are not violated.
4. All equipment is HiPot and Ground-bond tested prior to final packaging.

Declared Model Numbers: **DT30W (30G) (30 gallon Internal Heater)**

DT 30W-EU (30 gallon Internal Heater)

COMBI 10G, COMBI 30G, COMBI 60G

Testing performed by : **Aldous Consulting**

2845 Willow Tree Ln

Lab: 1625 Sharp Point Dr

Fort Collins, CO 80525

Scott Aldous - Proprietor

INTRODUCTION

Thank you for purchasing a Dairy Tech, Inc. Combi Pasteurizer. Your satisfaction with this product is very important to us. This guide will help you understand how your pasteurizer operates, and how to get the most benefit from it for you and your dairy operation.

DISCLAIMERS

THIS PASTEURIZER IS INTENDED TO BE USED IN THE MANNER DESCRIBED IN THIS USE AND CARE GUIDE. IT IS NOT INTENDED TO PASTEURIZE MILK OR OTHER GOODS FOR HUMAN CONSUMPTION.

Dairy Tech, Inc. has provided this use and care guide to assist you in the assembly, installation, and maintenance of your Combi Series Batch Pasteurizer (the “Pasteurizer”). Serious injury and even death to persons and livestock can occur from improper installation and use of the Pasteurizer. Serious property damage can result from improper installation and use of the Pasteurizer. We recommend professional installation by qualified plumbers and electricians familiar with such devices

DAIRY TECH, INC. RECOMMENDS THAT INSTALLATION OF ANY ELECTRICAL, MECHANICAL, GAS OR PLUMBING DEVICES REQUIRED FOR THE INSTALLATION, OPERATION AND MAINTENANCE OF THE DAIRY TECH PASTEURIZERS BE DONE ONLY BY QUALIFIED INDIVIDUALS.

It is your responsibility or the responsibility of the electrician, plumber or other qualified installation expert to obtain all necessary permits and certifications required by your town, county, state or other jurisdiction before installation of the Pasteurizer. It is your responsibility to read and understand the operational requirements of the pasteurizer before using it and to observe all safety precautions. It is also your responsibility to see that your personnel are properly trained to operate and maintain the Pasteurizer.

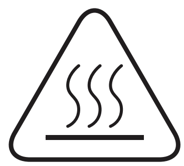
DAIRY TECH, INC. PROVIDES YOU WITH INSTRUCTIONS AND WARNINGS IN THIS USE AND CARE GUIDE, BUT WE ARE UNABLE TO COVER ALL POSSIBLE CONDITIONS AND SITUATIONS THAT MAY OCCUR IN YOUR DAIRY OPERATION. IT MUST BE UNDERSTOOD THAT COMMON SENSE, CAUTION AND CAREFULNESS ARE FACTORS WHICH CANNOT BE BUILT INTO THE PASTEURIZER. THESE FACTORS MUST BE SUPPLIED BY THE PERSON(S) INSTALLING, MAINTAINING OR OPERATING THE PASTEURIZER.

Under no circumstances is Dairy Tech, Inc., its directors, officers, shareholders or employees responsible for damage to property or injury to persons or livestock resulting from the improper installation or use of the Pasteurizer. Installation by an unqualified individual and improper use and improper maintenance may also void any equipment warranty that Dairy Tech, Inc. offers.

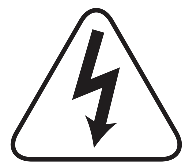
This use and care guide is based on information and data considered to be accurate; however, no warranty is expressed or implied regarding the accuracy of the information or data herein or the results to be obtained from the use of this data or information.

PLEASE READ THIS GUIDE CAREFULLY AND THOROUGHLY BEFORE INSTALLING AND OPERATING THE PASTEURIZER.

If you believe the pasteurizer is operating incorrectly, please refer to the trouble shooting guide included with these instructions before calling our service department. If you still have questions, contact your local representative or call 1-866-384-2697 extension 2 and we will help you to address your needs.



Warning:
Hot Surface



Warning:
High Voltage



Caution:
Important
Information

For your safety, the recommendations and information in this manual must be followed to minimize the risk of serious burn or electrocution, as well as to prevent property damage, personal injury, or death.

If you are burned by the heating coil, hot water, steam or hot milk: Contact a physician or other medical personnel for expert advice, or go to an emergency treatment facility.

Do not feed pasteurized milk to calves without first cooling it back down so that it is no hotter than 110°F (43°C). Milk hotter than 110° can cause severe burns to the calves.

Did You Know?

PRODUCT WARRANTY

This product is warranted to be free of manufacturing defects for up to 12 months from the date of purchase. All parts will be covered by a free replacement guarantee not including shipping or service. This warranty is intended for equipment in use under normal operating conditions and does not cover damages incurred by improper use or unforeseen acts of nature. Determination of covered defects, damages or repairs is at the discretion of Dairy Tech, Inc. This warranty covers only the cost of replacement parts at Dairy Tech, Inc. current pricing. Service is not covered by this warranty. Parts replaced under warranty must be returned to:

Dairy Tech, Inc.
34824 CR 29
Greeley, CO 80631

Parts not returned will be charged to customer at retail pricing.

PRODUCT REGISTRATION

If this product was purchased directly from Dairy Tech in Windsor, CO, it has already been registered and no further action is required. If the product was purchased by a distributor or other representative, please call Dairy Tech, Inc. at **866-384-2697** within 10 days to register the product.

Failure to do so may result in a decreased or voided warranty period for your unit. When calling, please have the serial number which can be found on the back side of the control housing or back panel.

You may also register on-line at **www.dairytechinc.com** where you can "Contact Us", fill in your information and in the notes type the product model and serial number and the word "Register".

IMPORTANT SAFETY INSTRUCTIONS

WARNING: To reduce the risk of electric shock, burns, serious injury or death to persons when using the Pasteurizer, follow these basic precautions:

1. Read all instructions before using the Pasteurizer.
2. Do not turn on the pasteurizer without first filling with water around the heating elements as directed on page 12.
3. Always disconnect the electrical power before attempting service. All power sources must be disconnected before the cover is removed for repair.
4. Do not allow children to operate or play around the Pasteurizer. Close observation of children is necessary when the unit is used with children nearby.
5. Do not reach into the Pasteurizer when the power is on and the paddle is turning as this can cause serious harm.
6. Hot Surfaces include the lid, plumbing fixtures, electrical fixtures, hoses, heater body, milk cabinet surfaces, draining water and the milk or colostrum. Touching these surfaces during operation may result in severe burns.
7. This equipment is designed to operate in an ambient temperature range of 35°F (2°C) – 100°F (38°C), altitude up to 2000m, maximum relative humidity 80% for temperatures up to 31°C decreasing linearly to50% RH at 40°C, for indoor use only.
8. Do not try to change the settings in the pasteurizer controller without consulting a technical expert at Dairy Tech, Inc.
9. Do not repair or replace any part of the Pasteurizer, or attempt any servicing unless specifically recommended in the trouble-shooting portion of this manual. Any modifications made to the unit beyond these instructions will void all warranties.
10. Always clean the unit immediately after each use, according to the instructions in the "Cleaning of your Pasteurizer" section of this manual. Build up of residue on the propeller or tank will decrease heating and cooling efficiency, as well as harbor potentially harmful pathogens.
11. During the heating cycle, always make certain the Pasteurizer lid is firmly seated on the pot of milk. The lid will be hot. Do not touch while in operation.
12. Use the pasteurizer only for its intended purpose. DO NOT use for milk intended for human consumption as this product has not been approved for such use.
13. Do not touch the tank of milk, motor, hoses, lid, handle or brass fittings while the unit is hot and working.
14. Do not attempt to tilt the machine while it is full. It is extremely heavy and can cause severe injury to the operator and may cause failure of the support structures.
15. To prevent severe burns, always allow the milk or colostrum to cool completely before handling or feeding to calves.
16. The Pasteurizer must be electrically grounded. DO NOT modify the plug that is provided with the Pasteurizer; if it will not fit the outlet, have an electrician install a proper electrical outlet.
17. The pasteurizer must be installed on a level surface to evenly distribute weight to all the support structures.

RECEIVING YOUR PASTEURIZER

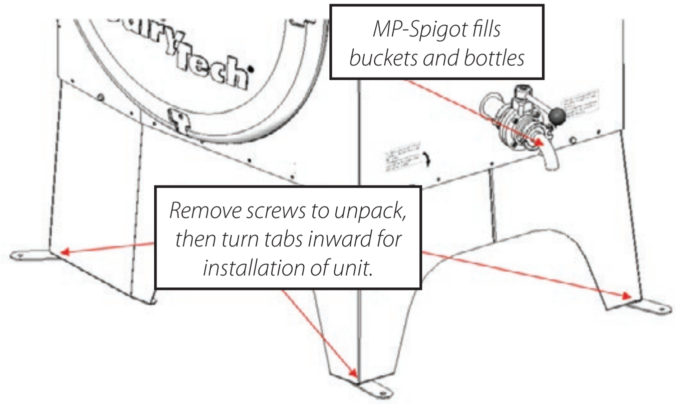
Use care when unpacking your Combi Pasteurizer. It will have arrived in one box or crate. Please make a note of any cautionary labels that are used on the carton suggesting orientation, where to cut with a knife, fragile, etc. For COMBI 10G Models, save the bottom half of the powder coated shipping container for use as a pasteurizer stand

INSTALLATION

Preparing the Machine

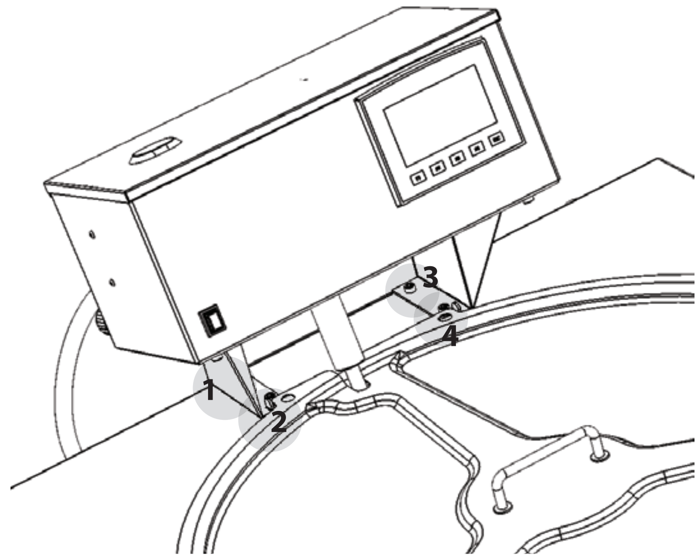
WARNING: INSTALL THE UNIT ACCORDING TO THE INSTALLATION INSTRUCTIONS. TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK, SERIOUS INJURY OR DEATH TO PERSONS, READ THE IMPORTANT SAFETY INSTRUCTIONS BEFORE OPERATING THIS PASTEURIZER.

Unpacking the COMBI 60G

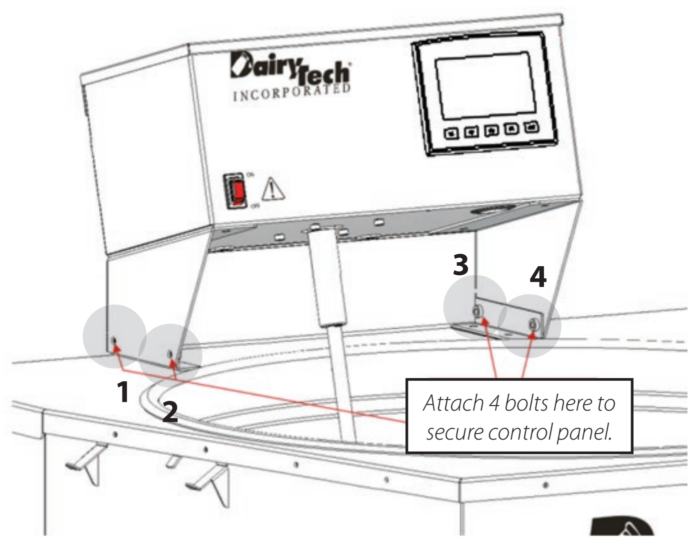


Mounting the Control Panel

The pasteurizing unit is typically shipped with the control box detached and packed in the tank of the unit. Mounting of the control box will be required. Gently remove the controller from the milk pot. Four mounting holes are provided on the top surface of the unit. Using the bolts that are provided, attach the control unit in an upright fashion to the top lid of the pasteurizer. The screw slots may allow some adjustment of the propeller and shaft if required later. The electrical connections are already made. Use care to not stretch these connections. See the next figure for the COMBI 10G and COMBI 30G.

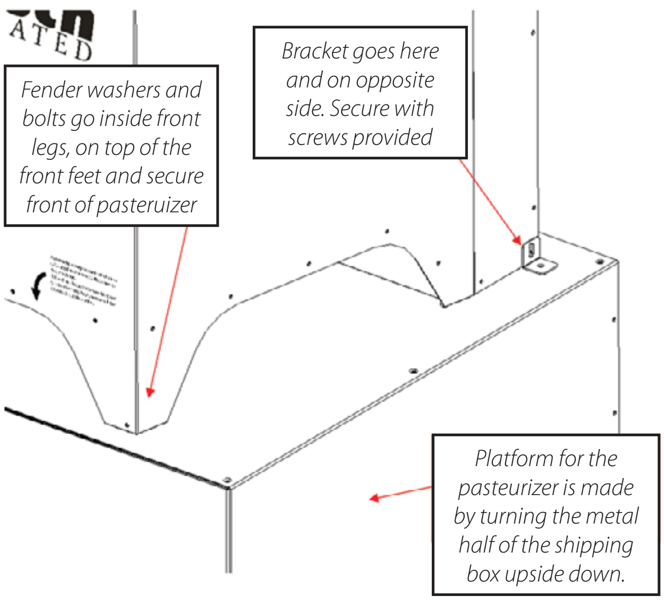


Here is another image shown below of the COMBI 60G which has side mounting screws to secure the control box to the top of the cabinet.



Mounting the COMBI 10G onto the Base

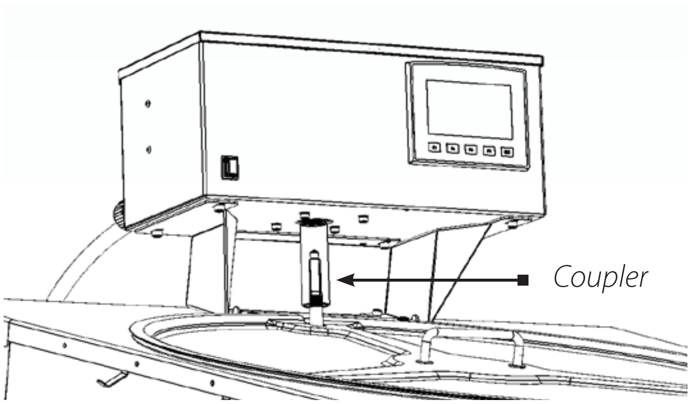
The COMBI 30G and COMBI 60G each come with a fully assembled leg stand to support the machines. The COMBI 10G is shipped to you in specially designed box that is half metal and half cardboard. You can discard the top cardboard half after removing straps and carefully lifting off of the machine. With an assistant, carefully lift the pasteurizer out of the metal powder coated box and set the COMBI 10G to the side. Turn the white box over and move it to the location where you wish to install the machine. Lift the pasteurizer and place it on the box so that the sides and front line up with the mounting holes. You will find two mounting brackets and hardware which you can use to secure the COMBI 10G cabinet to the support box. Refer to the illustration below.



Connecting the Stirring Shaft

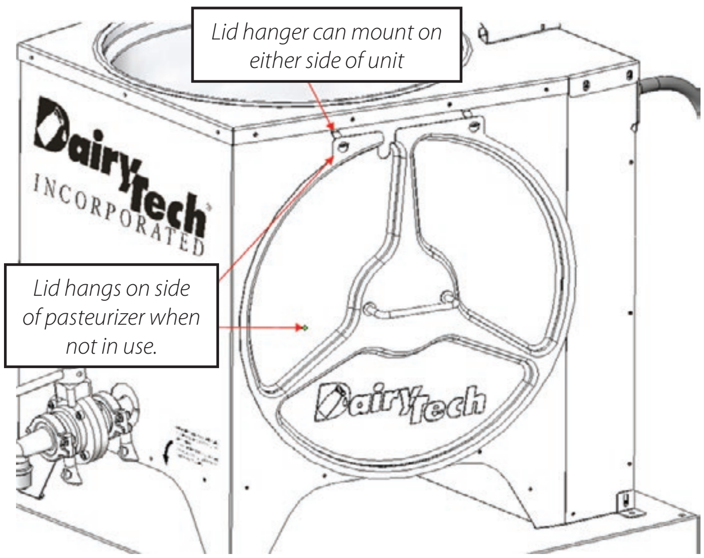
The motor shaft must also be attached by inserting it through the side entry of the coupler, followed by right-hand threading of the shaft into the coupler. The shaft can be gripped at the knurling located midway on the shaft. Only finger tighten as shown in the next image.

Dairy Tech recommends that the stirring shaft be removed from the coupler any time the pasteurizer is being moved. This will help to avoid a bend in the shaft. A bent shaft can result in premature failure of the drive motor. Treat the shaft with due care any time it is not in the machine.



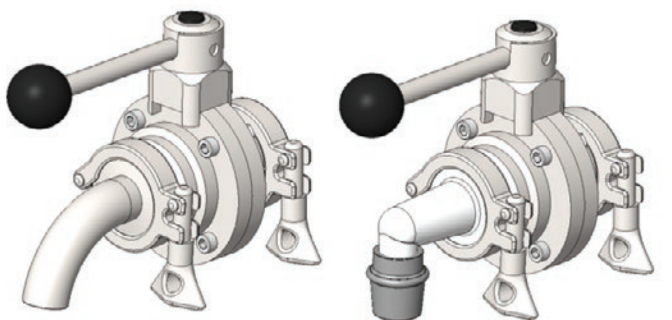
Lid Storage

The lid is packaged with the unit and can be hung on either side of the pasteurizer by the 2 holes at the top of the tab. This provides a convenient place to store the lid while the unit is being cleaned or filled. See below for proper lid storage.



Connecting the Milk Spigot

Combi Pasteurizers come supplied with the highest quality 304SS butterfly drain valve. These are installed on the front flange of the tank drain much the same as connections are made to a bulk tank flange using the clamps provided. Please see the diagram below. Make certain to include the gasket between each fitting. These parts can then be easily removed for thorough cleaning in a sink.



Spigot for filling Bottles and Buckets

Adapter for filling Perfect Udder® Bags

Choosing and Preparing a Location

Criteria for Selecting a Location

a) Choose an indoor spot that will be protected from the elements. Extreme heat will allow milk spoilage and freezing temperatures will damage the unit.

b) Cold water is required to be connected to the unit for water cooling the milk or colostrum, and a nearby hot water source is necessary for proper cleaning.

c) Floor drains will allow for proper cleaning and rinsing of the product as well as to clean up milk spills.

d) Power requirements are 240vac 30 or 50 amp circuit breaker rated for use as branch circuit protection. All 3 Models can also be ordered for 3 phase electric supplies. See local voltages for correct connection requirements.

e) Floor space requirements are approx. 1 yd^2 ($1M^2$)

f) Avoiding extremely drafty areas will improve heating efficiency of the unit.

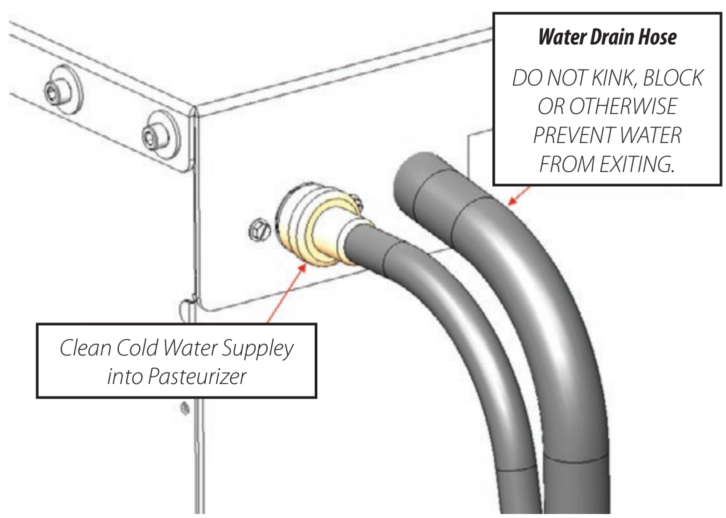
g) Always have 2 people lift and carry the unit grasping with both hands on the sides of the unit. The supports of the legs can be used for lifting. Never attempt to move the unit while it is full of milk or water.

Connecting the Hoses for Water-Cooling

WATER-COOLED UNITS: A 6' black supply hose is supplied with the machine. This hose with factory ends supplies all the cold water to cool the product when pasteurization is finished. It can connect to any normal domestic pressure cold water source including a hose but it MUST BE ON AT ALL TIMES DURING OPERATION. Using the supplied hose, attach one end to the threaded solenoid valve on the back of the unit, with the other end going to a regular hose bib supply. Pressure reduction is provided by the orifice of the solenoid valve. A relief valve is incorporated into the design of the COMBI 30G and COMBI 10G with a port coming out of the bottom of the unit toward the right rear. The COMBI 60G Model contains dual pressure relief ports. Should the drain line be raised too high or blocked, pressure will relieve itself by opening this valve which will spill water onto the floor. This protects the metal milk tanks from implosion in high pressure situations. Take care to avoid situations where any back pressure exists on the drain line, this will void the warranty.

WATER DRAIN: This 4' black hose is connected internally and takes cold water out of the unit once it has absorbed heat during the cooling cycle. It should be directed to a drain, cistern, stock tank or other collection system. **Do not connect the drain hose to another hose or to any system that can create back-pressure. This will cause damage to the cooling jacket and void the warranty.** If you wish to salvage the waste water, direct the drain line to a 5 gallon bucket and place an inexpensive sump pump in that bucket to send water where it needs to go. This prevents any back pressure to the unit.

It is important to keep water turned on anytime the pasteurizer is in operation to prevent damage to the heating elements.



ELECTRICAL REQUIREMENTS

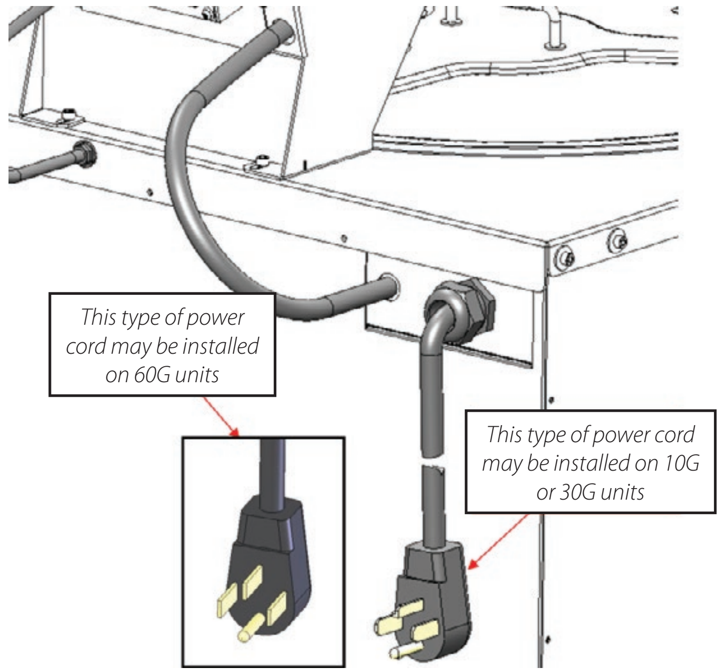
The standard electrical cord emerging from the back of the machine should be plugged directly into a 240vac 1P, grounded receptacle on a 30amp breaker for COMBI 10G Models, a 30amp breaker for COMBI 30G Models and a 50amp breaker for COMBI 60G Models. Take special note of the electrical label on the back of the machine to be sure. Failure to meet these requirements will void the warranty and could result in serious damage to the unit, bodily injury or death. The receptacle should be fitted with a water resistant cover for added protection.

ALL CONNECTIONS SHOULD BE PERFORMED BY AN ELECTRICIAN OR OTHER TRAINED PERSONNEL.

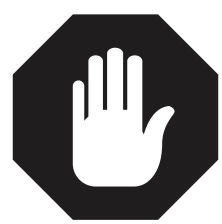
- The receptacle should be sharing minimal usage with other equipment to avoid unexpected outages and tripping of the breaker. If the power is lost, but returns within 1 hour, the cycle will resume automatically in most instances.
- **COMBI 10G** units at full power are rated at 22 amps at 230vac. Do not install on circuit breakers greater than 30 amps.
- **COMBI 30G** units at full power are rated at 26 amps at 230vac. Do not install on a circuit breaker greater than 30 amps.
- **COMBI 60G** units at full power are rated at 40 amps at 230vac. Do not install on circuit breaker greater than 50 amps.
- European Installations must be done with a switch or circuit breaker disconnect within reach of the equipment for power down, which should be labeled as such.
- DO NOT use an extension cord to operate the unit other than the one provided.
- Check your electrical system to make certain it is properly grounded to avoid the possibility of electrical shock.

International Installations: 10G, 30G & 60G

Some International models are not supplied with power cords per local electrical ordinances. Follow the labels attached to the back of the machine for specific wiring instructions in these instances.



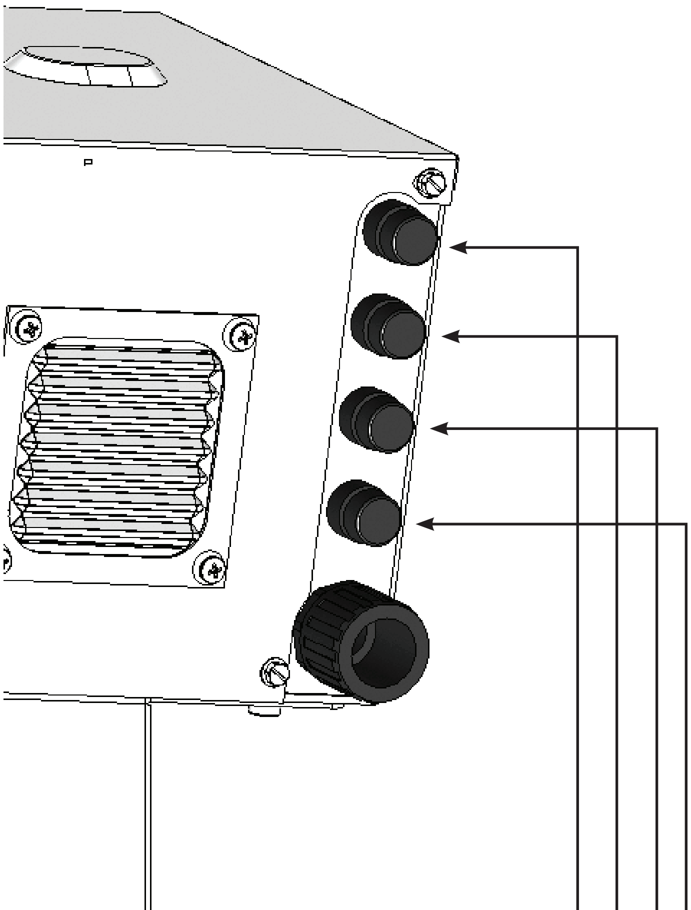
The pasteurizer is equipped with a cord having an equipment grounding conductor and a grounding plug. **BEFORE INSERTING THE PLUG, MAKE CERTAIN THAT THE POWER SWITCH IS SET TO "OFF" OR THE PUSH BUTTON SWITCH IS IN THE POPPED OUT POSITION.** The plug must be inserted into an appropriate outlet that is installed and grounded in accordance with all local codes and ordinances. DO NOT modify the plug provided with the Pasteurizer; if it will not fit the receptacle, have a proper outlet or new plug end installed by a qualified electrician.



DO NOT TURN THE PASTEURIZER ON UNTIL YOU ARE TOLD TO DO SO. FAILURE TO FOLLOW THIS INSTRUCTION MAY DAMAGE THE UNIT AND VOID THE WARRANTY.

External Fuse Board

The unit is equipped with 4 external fuses on the back of the unit. These fuses protect delicate electronics and also serve as a troubleshooting guide in cases of system malfunction. The layout of the fuses is shown below, as well as on the unit itself. Refer to Trouble Shooting for further information.



COMBI Models use ¼" x 1 ¼" fast-blow style fuses

F1	**Line 1 2A 250vac**
F2	**Line 2, 2A 250vac**
F3	**Motor, Fan, Valve 1A 250vac**
E4	**24VDC supply, 1A 250vac**

WARNING: Component Ratings

Touch Screen Control:	120-240vac, 1amp, 1P, 50-60Hz
YN80 Gear Motor:	1250RPM, 240vac, 1P,1 amp, 60Hz
YN80 Direct Drive Motors:	225RPM, 240vac, 1P, 1 amp, 50-60Hz
Heater COMBI 10G:	L10A8-1E24, 1250watt, 240vac, 1P/3P, 20 amp, 50-60Hz
Heater COMBI 30G:	N14A20-1E24, 1850watt, 240vac, 18amp,1P/3P, 50-60Hz
Heater COMBI 60G:	N24-A23, 3000watt, 240vac, 36amp, 1P/3P, 50-60Hz
Cooling Fan:	240vac, 1P, 0.5amp, 50-60Hz

DairyTech® INCORPORATED

For parts list and ordering visit www.dairytechinc.com

You may also see the last pages of this user manual.

Contact Dairy Tech, Inc.

Dairy Tech, Inc.
34824 CR 29
Greeley, CO 80631

Toll Free:	**1-866-384-2697**
Local:	**1-970-674-1888**
Fax:	**1-970-686-5871**
Hours:	**M – F 7am – 4pm, MST**
Web:	**www.DairyTechInc.com**
eMail:	**office@DairyTechInc.com**

FIRST USE OF PASTEURIZER.

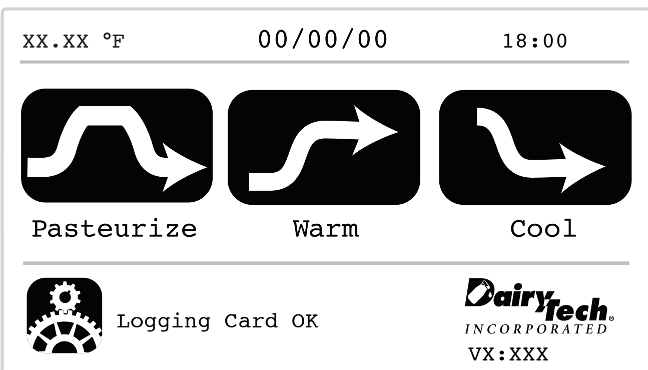


DO NOT TURN THE PASTEURIZER ON UNTIL YOU ARE TOLD TO DO SO. FAILURE TO FOLLOW THIS INSTRUCTION MAY DAMAGE THE UNIT AND VOID THE WARRANTY.

THE SYSTEM MUST BE CHARGED WITH WATER TO PREVENT DAMAGE TO THE HEATING ELEMENTS.

Charging the System

After installation is complete, attach the cold water supply hose and turn on the water. Turn the unit on and wait for home screen to appear.

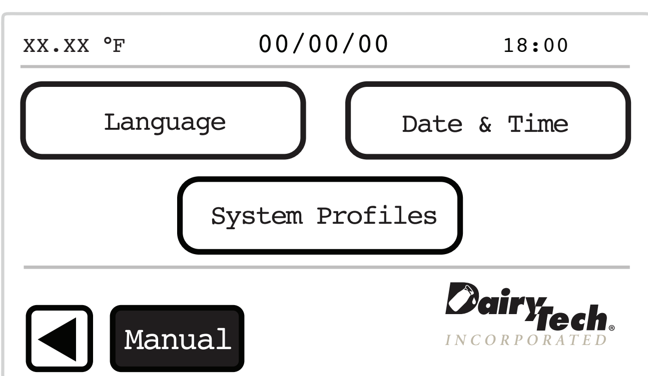


Home Screen

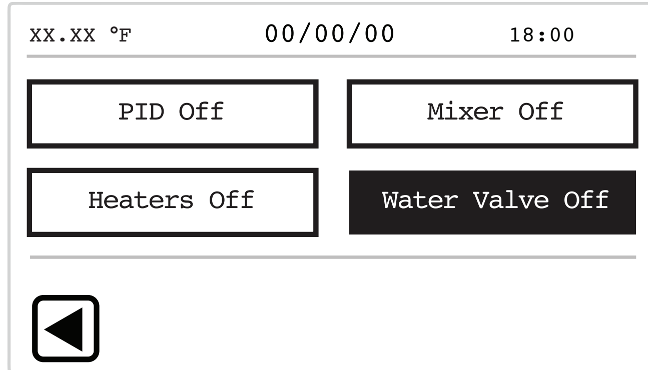
1. Select "**SETTINGS**"



2. Select "MANUAL"



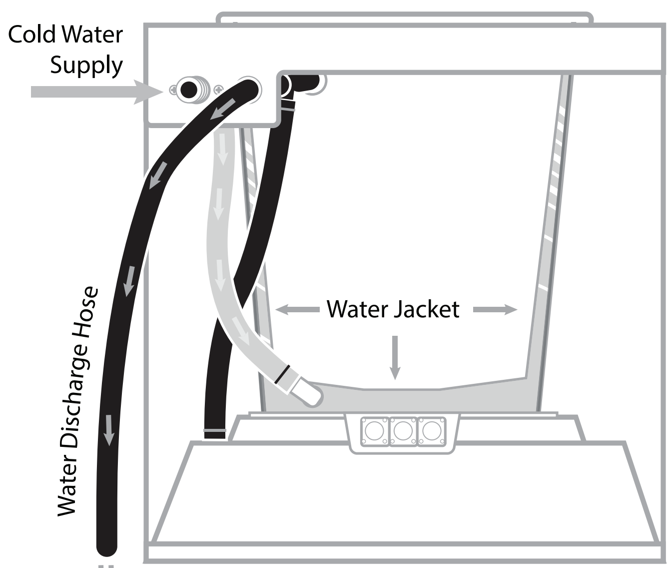
3. Select "**WATER VALVE OFF**"



4. It will now display "**WATER VALVE ON**" indicating the valve is open

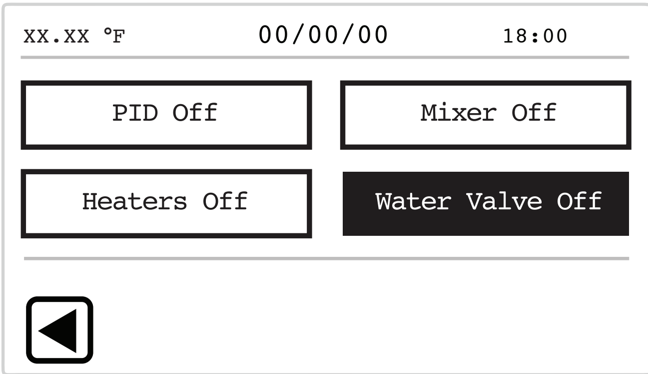


This will call for cooling water to fill the water jacket of the pasteurizer. It may take several minutes for the water jacket to fill with water.



Back of Pasteurizer

5. Once water is flowing freely from the discharge line, press "Water Valve ON" once more to turn off the valve.



This step will not be necessary in future uses unless the tank is drained. The water valve will open and close as needed while in operation.

BEFORE USING THIS UNIT FOR THE FIRST TIME, WASH OUT THE INSIDE OF THE DRUM WITH HOT SOAPY WATER AND RINSE CLEAN. INITIAL CLEANING OF THE MILK POT IS NECESSARY TO REMOVE DIRT AND CONTAMINATION FROM TRANSIT.

CLEANING THE SYSTEM

(Be sure the equipment is powered OFF)

1. With the stir motor stopped, raise the lid from the milk pot and place it on the hook on either side of the unit after thorough cleaning in a sink.
2. Perform a warm water rinse to remove milk and dirt.
3. Clean the following milk surfaces with hot water and an appropriate disinfectant. Go over all the exposed surface areas with the included scrub brushes and appropriate disinfectants. A mild abrasive pad may be used to remove any residue on the following components:
   - Motor shaft, coupler and propeller *(shaft can be unthreaded for cleaning by grasping the coupler with the slot facing forward and unthread the shaft by grasping the knurling mid shaft for a better grip.)*
   - Thermocouple well at bottom of pot
   - Underside of the pasteurizer lid
   - Milk tank and drain spigot/valve
   - Accessory spigots, pitchers or hoses
4. Stubborn residues may be cleaned with a scour sponge if necessary. Avoid the use of acids as they may corrode some of the brass or aluminum parts on the equipment. Follow manufacturers handling recommendations for all chemicals.
5. Spray the stainless steel surfaces with a disinfectant and allow it to dry on the surface. This will help to eliminate the build-up of a biofilm.

Filling and Emptying the Milk Drum

While some dairies may elect to have the milk line pump directly into the pasteurizer, most dairies will be dealing with volumes that can be dumped into the unit from milk cans or collection buckets. You ay need to provide a sturdy step for short employees who may have trouble comfortably dumping milk into the unit.

- Try to avoid excessive splashing or spilling of the product as it is being poured into the unit.
- Clean spills with a damp cloth as quickly as possible.
- Do not overfill the pot as the milk will splash out from under the lid while being stirred.

To remove the milk: Open the spigot to fill buckets, bottles or storage bags. DO NOT TILT THE EQUIPMENT TO GET MILK OUT! This may cause undue stress on the support system and could potentially damage the unit or harm the operator. Any residual milk or colostrum can easily be wiped or brushed from the unit

Energy and Time Saving Tips

1. Pasteurize the milk as quickly as possible after collection to take advantage of the heat already in the milk to improve energy efficiency. This will also prevent the immediate heavy growth of bacteria in this fresh product.
2. Avoid placing the unit in an area of high drafts to prevent convection heat losses while pasteurizing.
3. Colostrum can be stored in the refrigerator for 24-48 hours if it is handled cleanly once it has been pasteurized. Filling Perfect Udder® Colostrum management bags allows for a disposable system that makes it easy to keep track of dates and colostrum quality. These bags also allow the product to be warmed more quickly when they are needed for the newborn and can then be fed without recontamination of the product.

   These can be ordered at:

   www.calfology.com or at
   www.dairytechinc.com.
4. Do not dip bottles into the tank for filling as this will likely contaminate the product with bacteria from the bottom and sides of the bottles.
5. Always wear nitrile or latex gloves when handling the milk or colostrum to prevent the spread of pathogens from the skin surface.

WHEN SERVICE IS REQUIRED

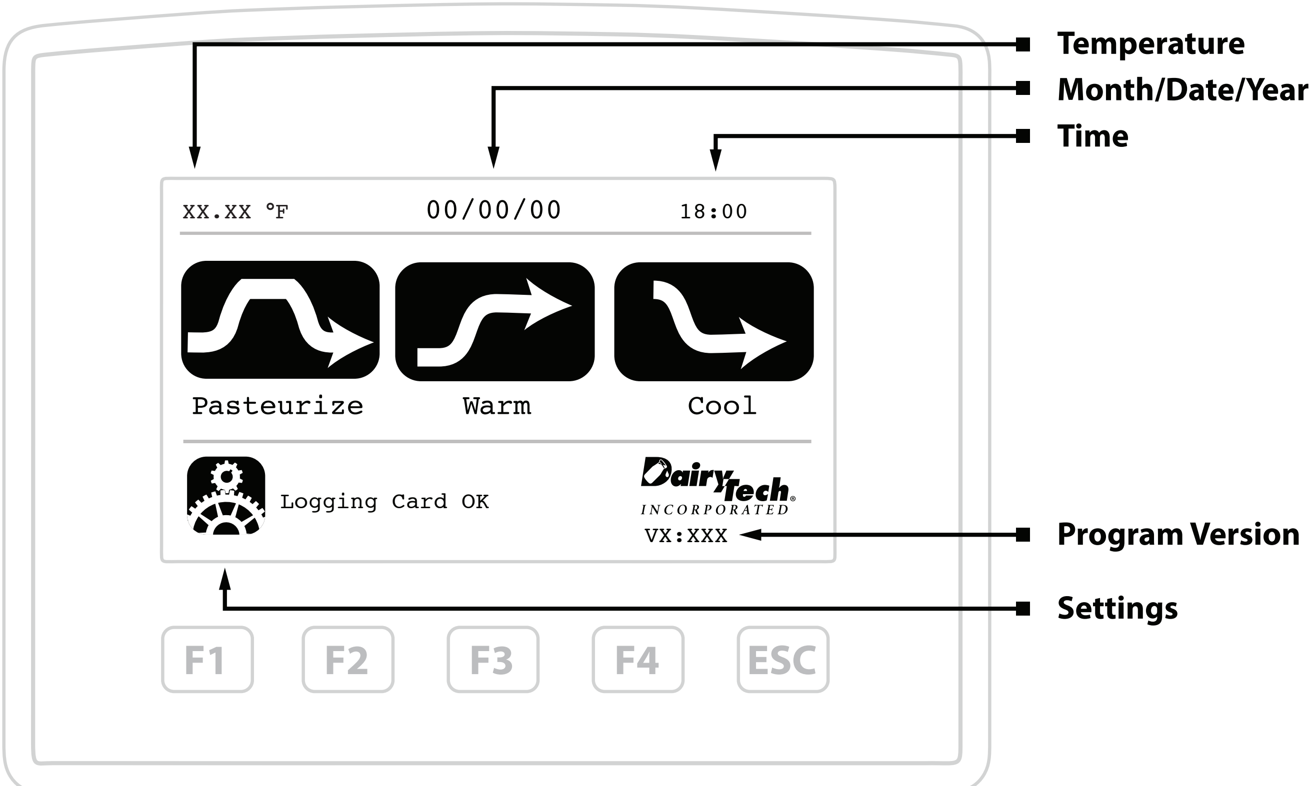
If you purchased the Pasteurizer from an authorized dealer, contact them directly with inquiries or repair questions. For prompt service, work through the troubleshooting guide in this manual to give an accurate description of the problem.

The Dairy Tech, Inc. service department can also assist when needed 1-866-384-2697 extension 2

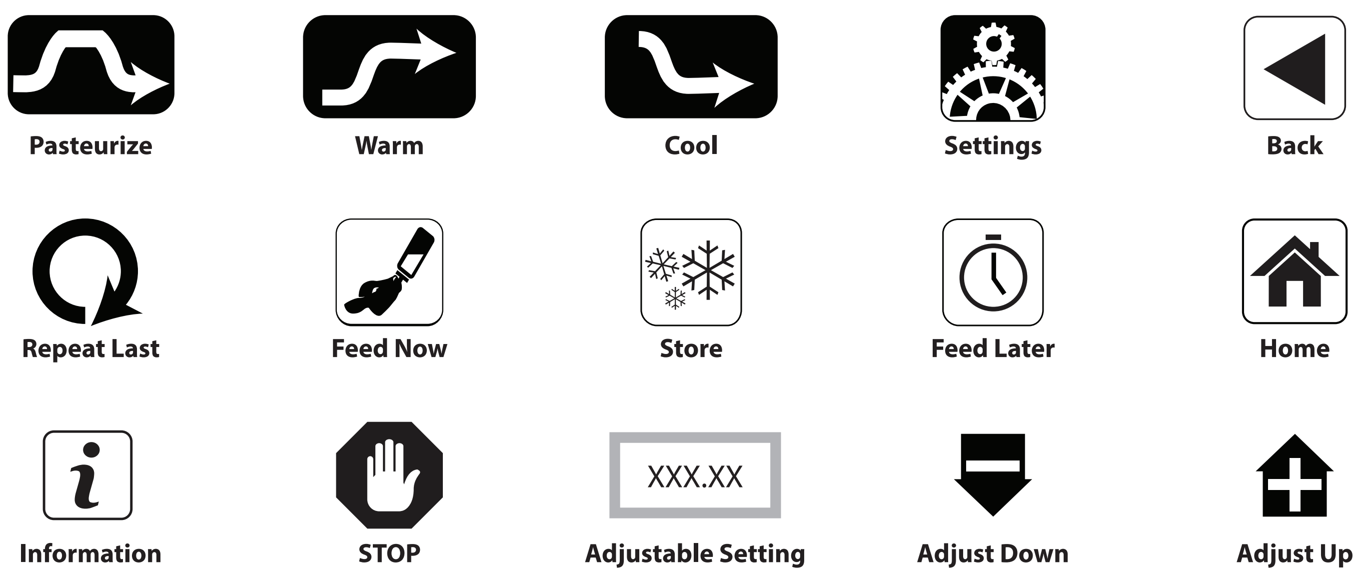
Repair by an unauthorized service technician will void the warranty.

USING AND PROGRAMMING THE TOUCHSCREEN CONTROLLER

Be sure the pasteurizer is charged with water using the instructions on page 10 prior to the first use of your pasteurizer.



CONTROLLER BUTTON LEGEND



ADJUSTING SETTINGS

*** IMPORTANT WARNING***

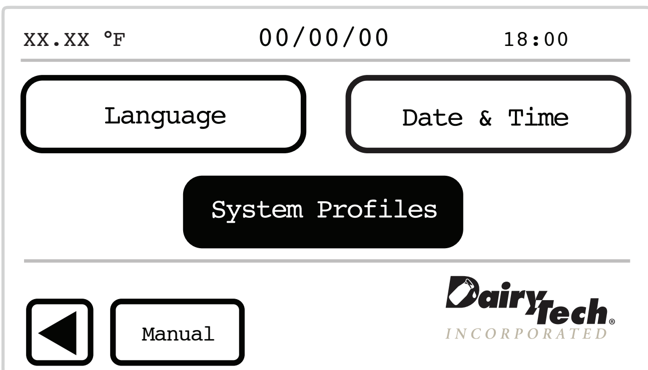
DO NOT ALTER SETTINGS IN THE CONTROLLER WITHOUT CONSULTING A DAIRY TECH REPRESENTATIVE. ANY UNAUTHORIZED ADJUSTMENTS WILL VOID THE PRODUCT WARRANTY AND MAY LEAD TO SERIOUS HEALTH CONSEQUENCES FOR THE CALVES.

Resetting the Password

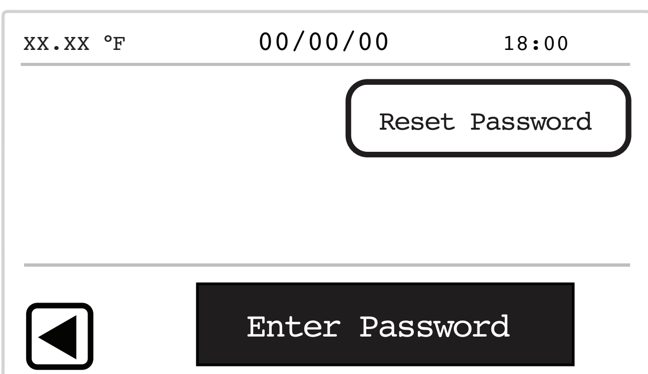
1. Select "**SETTINGS**"



2. Select "**SYSTEM PROFILES**"



3. Select "**ENTER PASSWORD**"

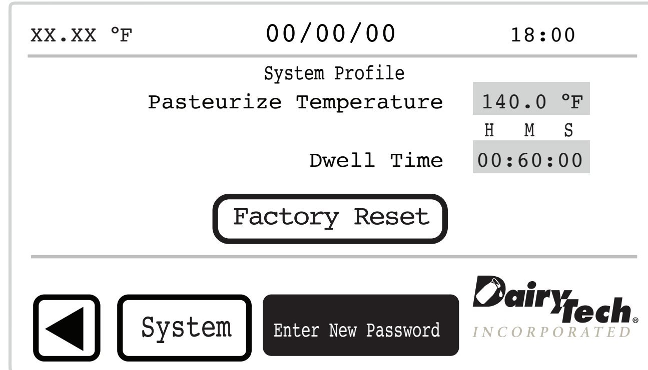




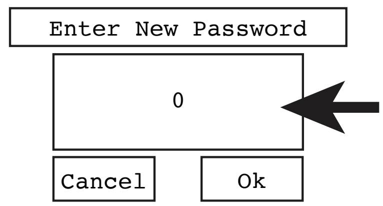
This information is protected by a password. You will be asked to enter a password to continue.

4. Enter the default password, "**0**" and press "**RETURN/ BACK**". You now have access to the "**SYSTEM PROFILES**".

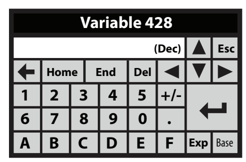
5. Select "**ENTER NEW PASSWORD**"



6. A new password screen will appear that shows the default password **"0"**, or the last password saved. Selecting this box will open a new screen that will allow you to create your new password.

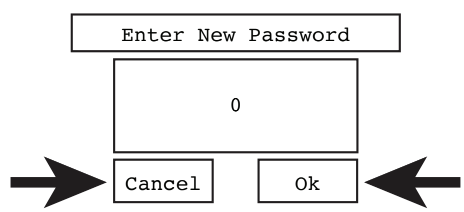


7. Enter password of choice, then press "**RETURN/BACK**".



Keep your new password in a safe place. *If at any time the new password is lost or cannot be remembered, the system has default password that can retrieved by contacting your Dairy Tech Dealer or our Service Department.*

8. If you are satisfied with your new password, press "**OK**" to save or press "**Cancel**" to keep the previous password.

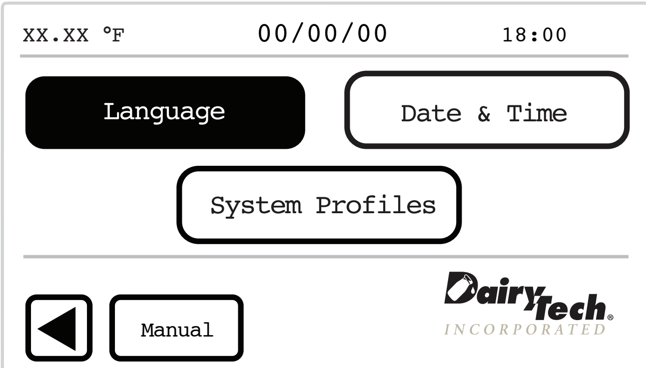


9. Select "**BACK**" to complete

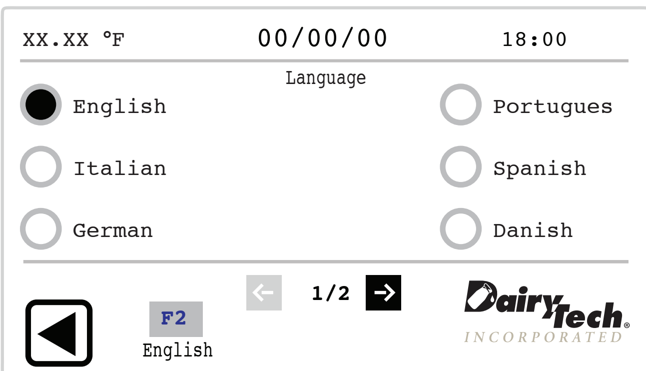


Selecting a Language

1. Select "**SETTINGS**"
2. Select "**LANGUAGE**"



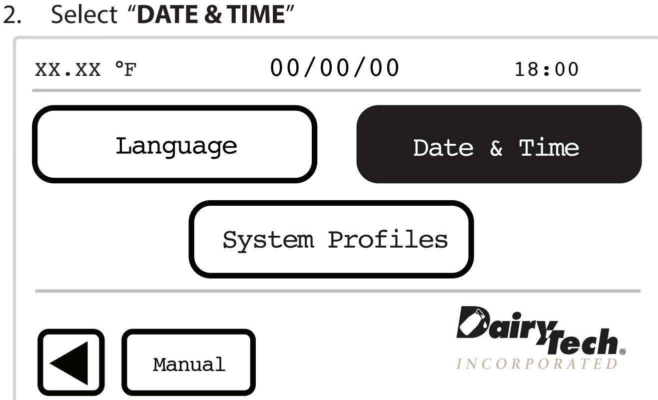
3. Select a language from list on screen



4. Select "**BACK**" to save your changes

Setting Date and Time

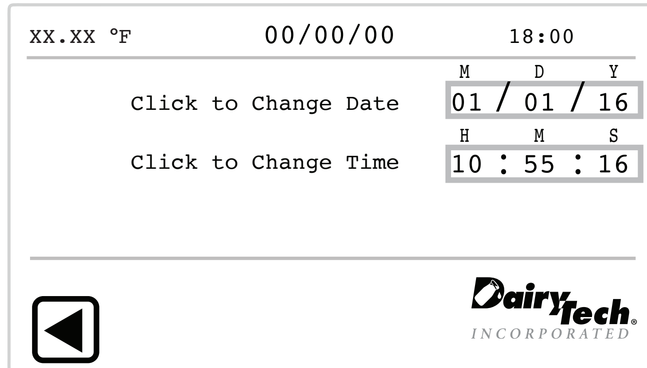
1. Select "**SETTINGS**"
2. Select "**DATE & TIME**"



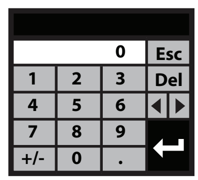
To adjust any of the fields, select the desired box with a blue outline.

DATE: The First box is for the MONTH, and has a range from 01 to 12, the Second Box is for DAY and has a range from 01 to 31, and the Third Box is for YEAR and has a range from 01 to 99. The First box is active and ready

TIME: First box is for HOUR and has a range from 01 to 24, the Second box is for MINUTES and has a range from 01 to 59. The Third Box is for SECONDS and has a range from 01 to 59. Time is set as Military Time.



3. After selecting a field to adjust, a keypad will appear.



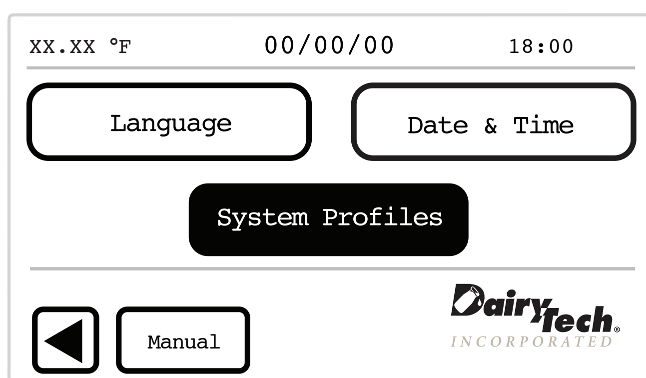
Enter the desired number and select "**RETURN/BACK**" to complete the change. Repeat this step as needed until all fields are correct.

4. Select "**BACK**" to save your changes

Calibrating Thermocouple Temperature

It is a good idea to double check program temperatures.Allow a cycle to climb to the pasteurization temperature and level out for five minutes. Now it is okay to check the batch temperature of the colostrum or milk with a high quality thermometer. If the control reads high, reduce offset, if the control reads low, increase offset.

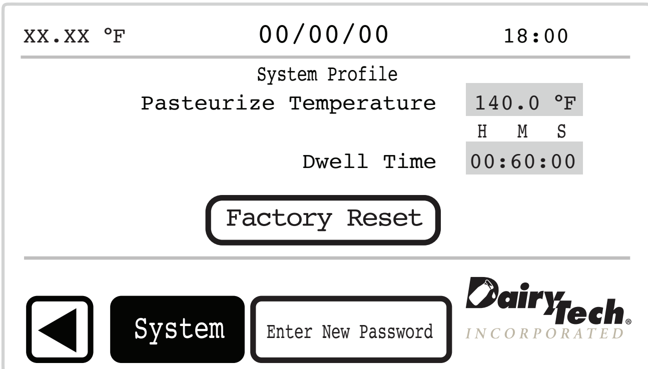
1. Select "**SETTINGS**"
2. Select "**SYSTEM PROFILES**"



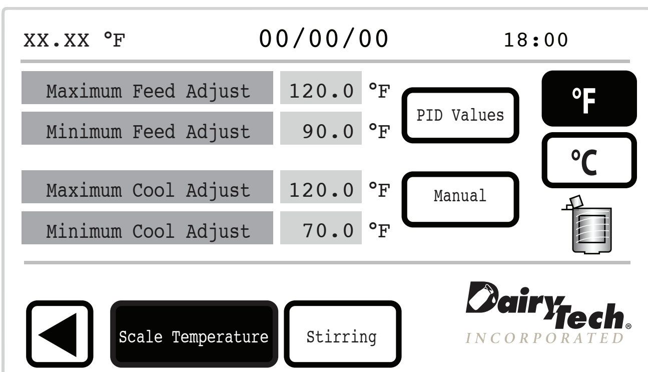


This information is protected by a password. You will be asked to enter a password to continue.

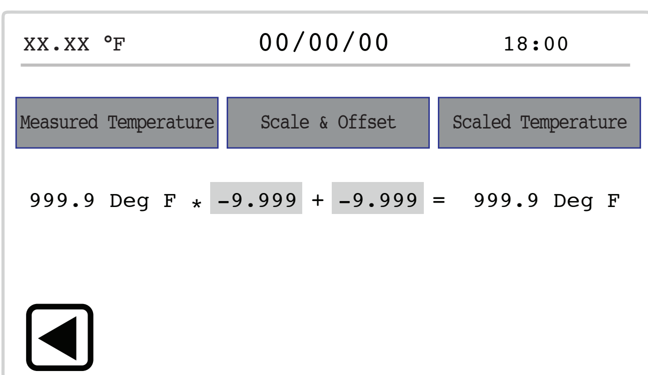
3. Enter your password, then press "**RETURN/BACK**". You now have access to the "**SYSTEM PROFILES**".
4. Select "**SYSTEM**"

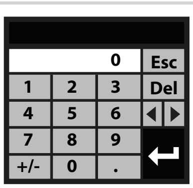


5. Select "**SCALE TEMPERATURE**"



You will need to adjust the additive variable. You can adjust the temperature by a (+,-) degree.





Enter the desired number and select "**RETURN/BACK**" to complete the change. Repeat this step as needed until all fields are correct.

6. Select "**BACK**" to save your changes



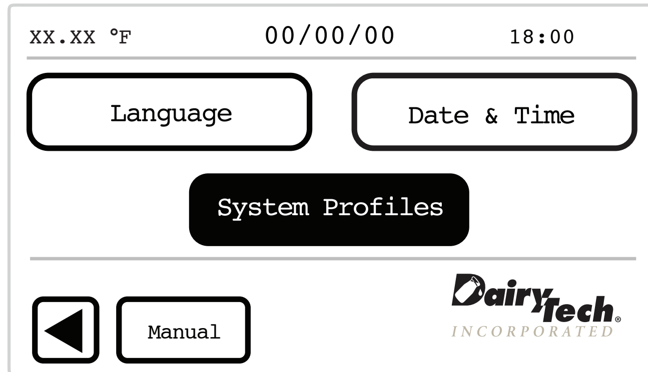
Celcius/Fahenhiet

Changing from Farenheit to Celcius is simple.

1. Select "**SETTINGS**"



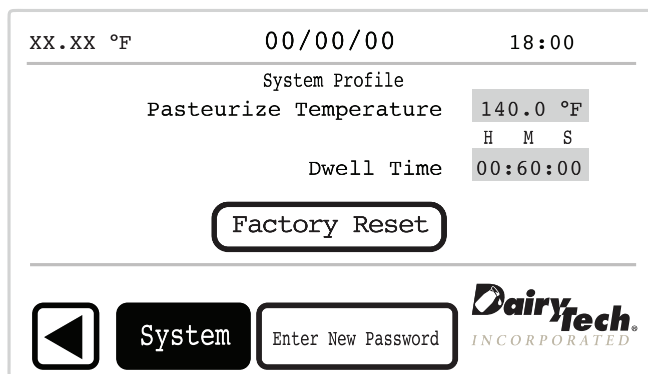
2. Select "**SYSTEM PROFILES**"



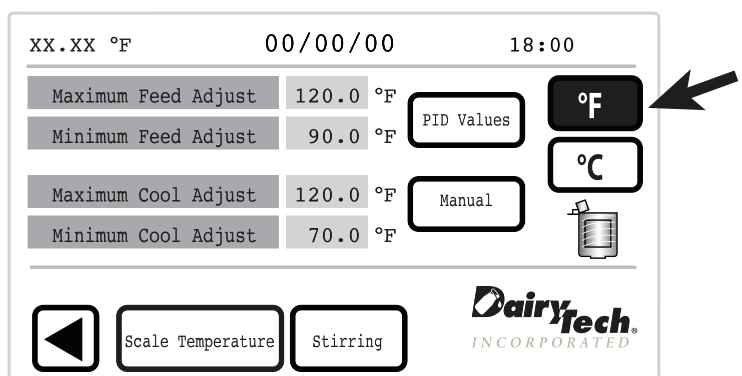


This information is protected by a password. You will be asked to enter a password to continue.

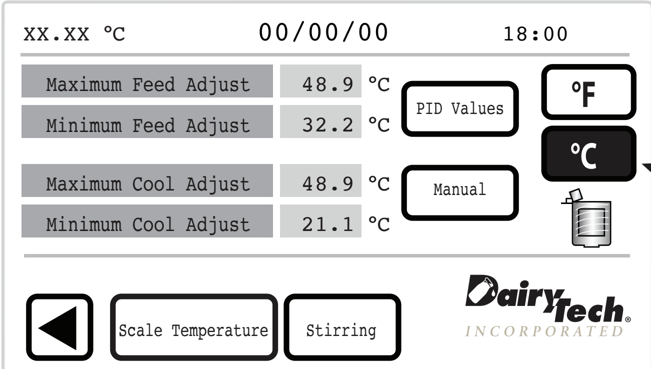
3. Enter your password, then press "**RETURN/BACK**". You now have access to the "**SYSTEM PROFILES**".
4. Select "**SYSTEM**"



5. Select **°F** or °**C**



Your temperature choice will be reflected throughout the program.



6. Select "**BACK**" to save your changes



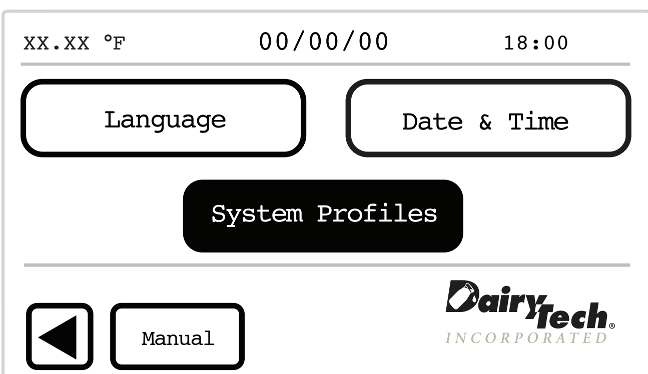
Adjusting the Agitator Hold

When running the profile "Pasteurize to Feed Later" the motor can be set to periodically stir for a specific amount of time.

1. Select "**SETTINGS**"



2. Select "**SYSTEM PROFILES**"

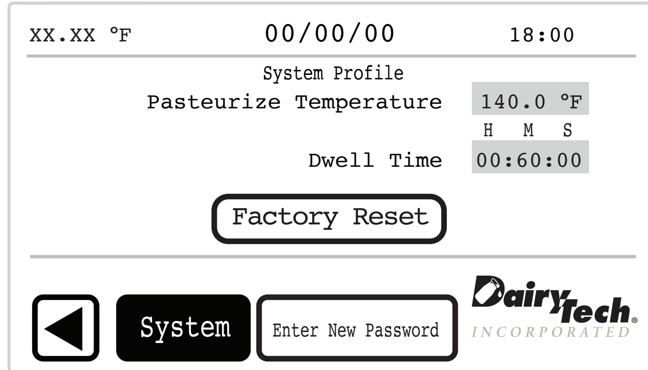




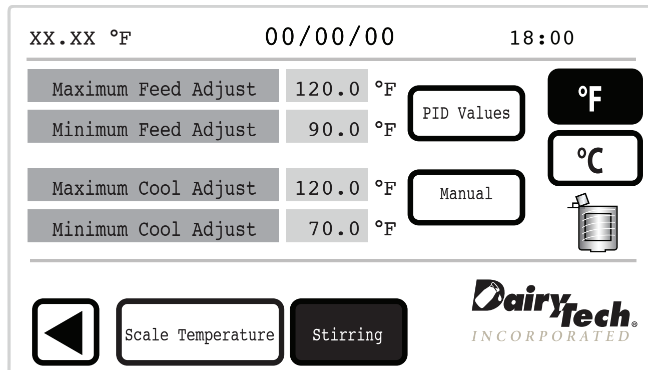
This information is protected by a password. You will be asked to enter a password to continue.

3. Enter your password, then press "**RETURN/BACK**". You now have access to the "**SYSTEM PROFILES**".

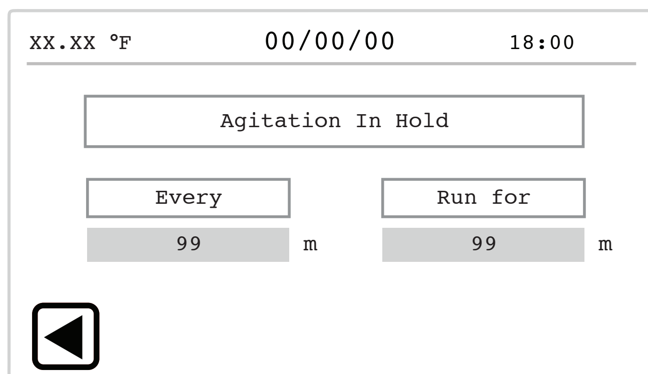
4. Select "**SYSTEM**"



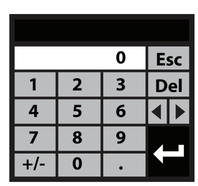
5. Select "STIRRING"



6. From this screen the user can adjust how long you want the agitator to run during the holding time by selecting one of the "BLUE" highlighted fields.



After selecting a field to adjust, a keypad will appear.



Enter the desired number and select "**RETURN/BACK**" to complete the change. Repeat this step as needed until all fields are correct.

7. Select "**BACK**" to save your changes



Adjusting Feed and Cool Temperatures

Dairy Tech Inc. has designed the feeding temperature parameters and cooling temperature parameters to reflect university and industry research.

Currently, each controller is set up to have the below parameters for feeding and cooling temperatures:

- **Maximum Feeding Temperature: 115 degrees**
- **Minimum Feeding Temperature: 98 degrees**

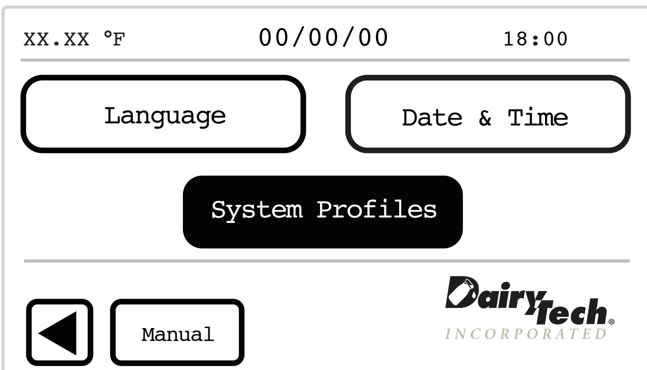
- **Maximum Cooling Temperature: 90 degrees**
- **Minimum Cooling Temperature: 65 degrees**

To change Maximum Feed and Cool Temperatures:

1. Select "**SETTINGS**"



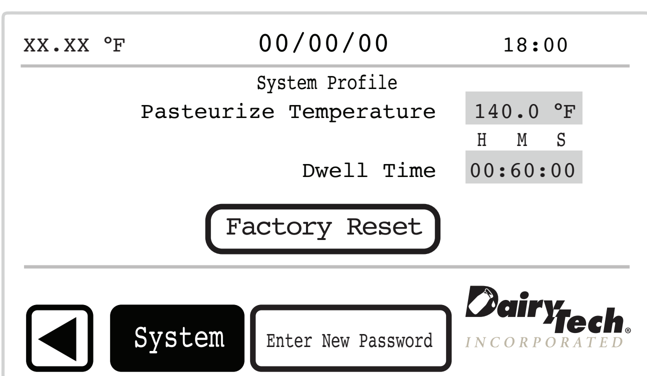
2. Select "**SYSTEM PROFILES**"



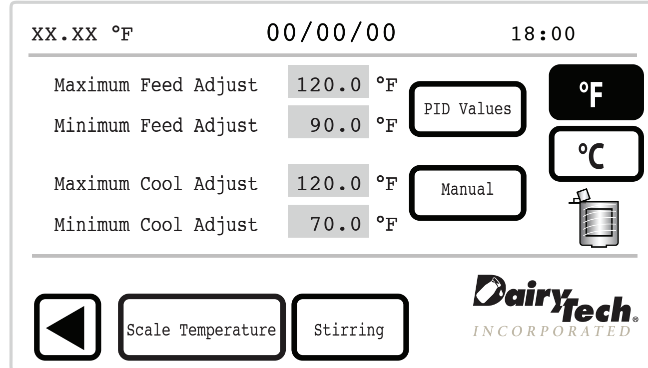


This information is protected by a password. You will be asked to enter a password to continue.

3. Enter your password, then press "**RETURN/BACK**". You now have access to the "**SYSTEM PROFILES**".
4. Select "**SYSTEM**"



5. Adjust the "**FEED**" or "**COOL**" temperatures by touching the BLUE box that contains the temperature you want to change.



After selecting a field to adjust, a keypad will appear.



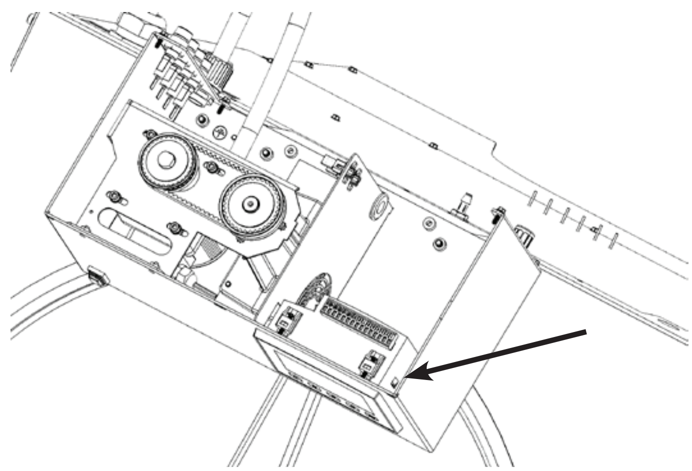
Enter the desired number and select "**RETURN/BACK**" to complete the change. Repeat this step as needed until all fields are correct.

6. Select "**BACK**" to save your changes



Downloading Pasteurization Data

A micro-SD card is located on the right hand side of the controller. You will see the word "SD" above the slot containing the card.



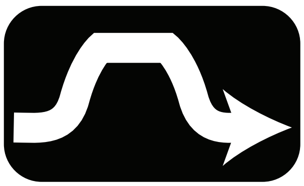
When Data is needed, please remove the Micro SD Card and connect to adapter of choice.

** Please note that the SD Adapter card is located with the extra fuses. The user will be able to input the micro-SD card to the large SD Adapter. This can easily be adapted to a USB connector. **

Connect Large SD Card to a USB Connector then attach USB connection to a computer and wait for documents to load. You will find an excel file of the data.

USING YOUR PASTEURIZER

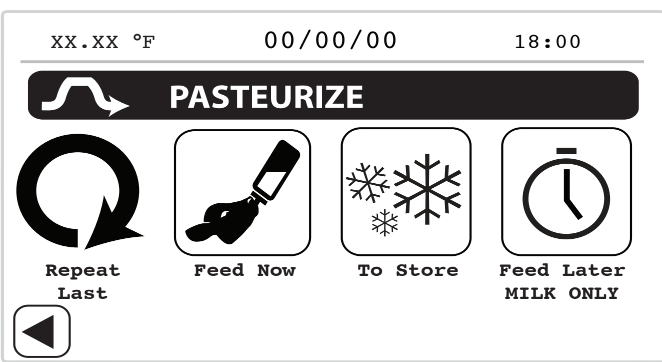
> **Warning**: The aluminum and stainless steel drums and lids can cause severe burns if handled before the product is completely cooled. Always finish the cooling cycle before handling the milk. Grasp the lid by the handles and do not handle the milk or colostrum unless it has cooled.

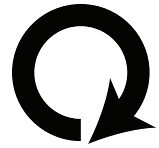


PASTEURIZE

When "PASTEURIZE" is selected, four profile options will appear. These options dictate what will occur when pasteurization is complete.

1. **REPEAT LAST**
2. **FEED NOW**
3. **TO STORE**
4. **FEED LATER MILK ONLY**

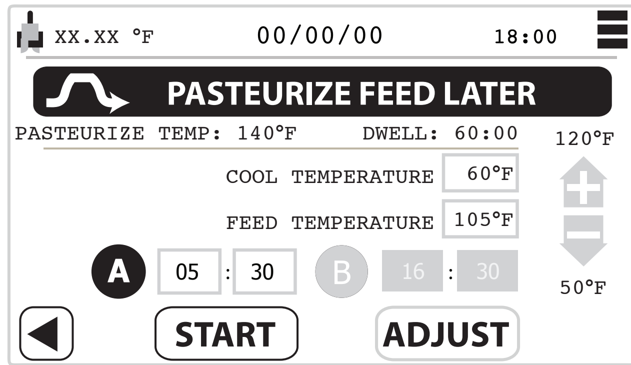




REPEAT LAST

Selecting the "**REPEAT LAST**" Pasteurization Option will open a screen that shows the parameters of the last Pasteurization Option ran.

This example shows a "Pasteurize, Feed Later" Option.



You have 3 choices: BACK, ADJUST or START

1. Press "**BACK**" button and return to the "Pasteurize" menu to select from one of the other 3 options

2. **ADJUST** Press "**ADJUST**" to change the current settings. ***Please refer to the "ADJUST PROGRAM SETTINGS" instructions listed in the FEED LATER Pasteurize Options section.***

3. **START** When you are satisfied with your adjustments, press "**START**" to begin the program.

   Once the program is in progress, the screen will indicate which stage the program is in.

   Upon completion, the Controller Screen will indicate "COMPLETE".

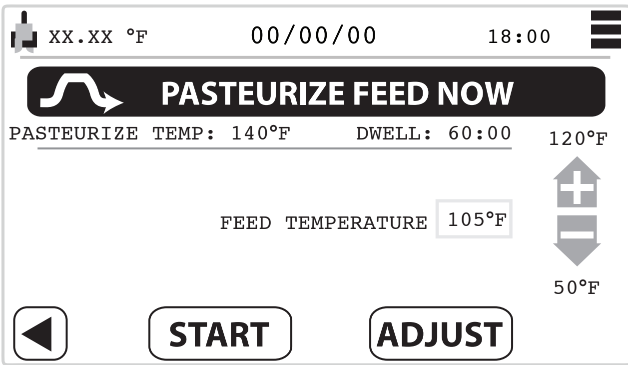
   Pressing the "HOME" button will take the operator back to HOME screen.



FEED NOW

Selecting the "**Feed Now**" Pasteurization Option allows you to pasteurize milk then feed at a selected temperature when pasteurization is complete.

A screen will show all the parameters of the last "FEED NOW" program ran.



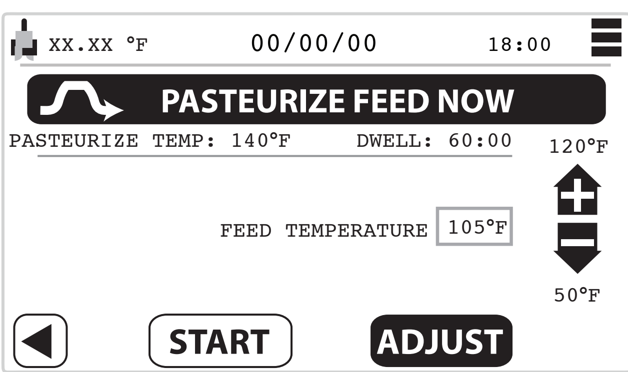
You have 3 choices: BACK, ADJUST or START

1. Press "**BACK**" button and return to the "Pasteurize" menu to select from one of the other 3 options

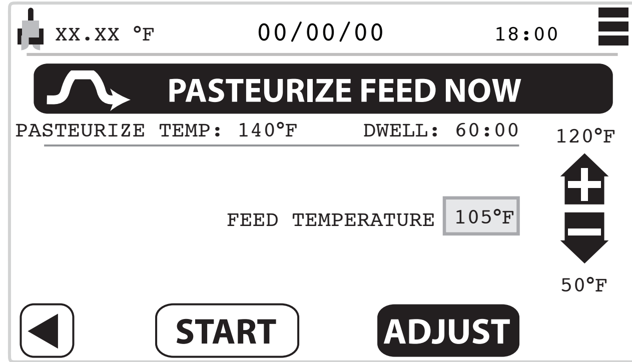
2. ADJUST Press "**ADJUST**" to change the current settings.

Adjusting Program Settings

Pressing the "ADJUST" button will highlight all available adjustments that can be made to the current program. A BLUE BOX will indicate the current active fields to be adjusted.

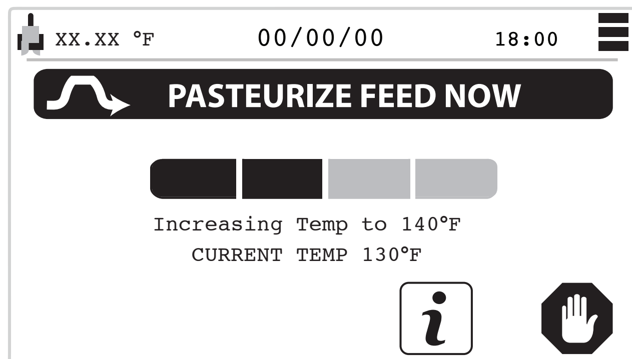


Use the arrow buttons to adjust the setting in the active BLUE BOX up or down. To activate a different field, simply touch it and it will turn BLUE to indicate that it is now active.



3. START When you are satisfied with your adjustments, press "**START**" to begin the program.

Once the program is in progress, the screen will indicate which stage the program is in.



Upon completion, the Controller Screen will indicate "COMPLETE".



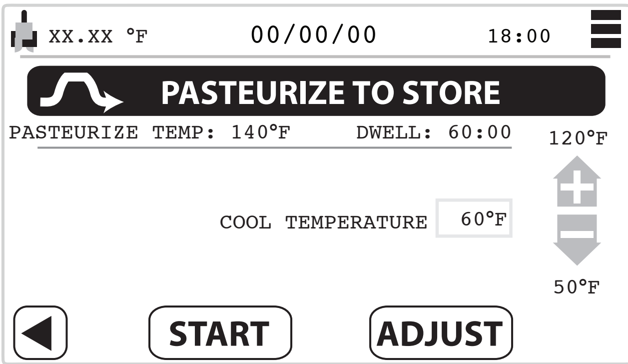
Pressing the "HOME" button will take the operator back to HOME screen.



TO STORE

Selecting the "**To Store**" Pasteurization Option allows you to pasteurize, then cool colostrum to be stored in the refrigerator or the freezer. This profile is recommended for use with Perfect Udder® Bags.

A screen will show all the parameters of the last "TO STORE" program ran.



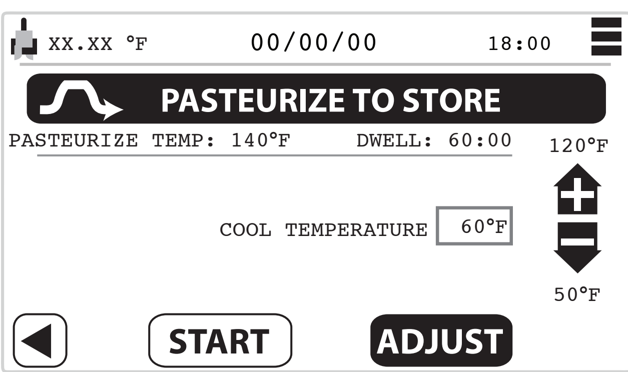
You have 3 choices: BACK, ADJUST or START

1. Press "**BACK**" button and return to the "Pasteurize" menu to select from one of the other 3 options

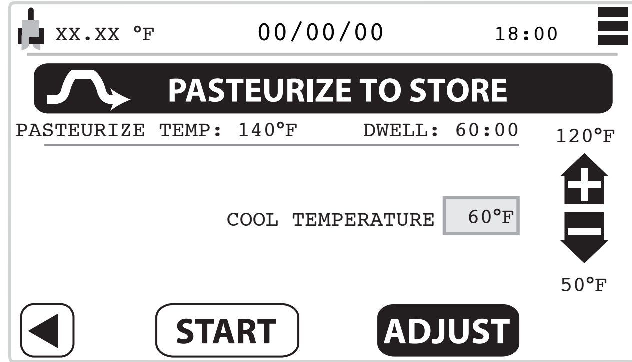
2. **ADJUST** Press "**ADJUST**" to change the current settings.

Adjusting Program Settings

Pressing the "ADJUST" button will highlight all available adjustments that can be made to the current program. A BLUE BOX will indicate the current active fields to be adjusted.

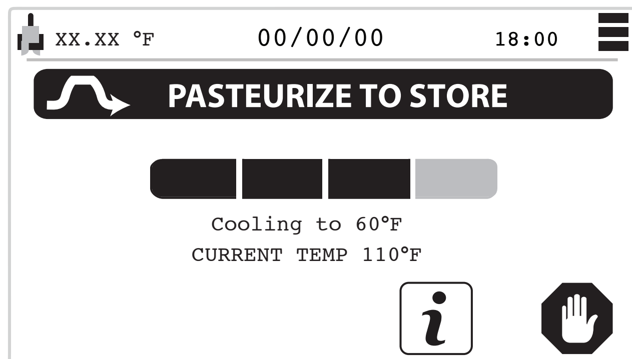


Use the arrow buttons to adjust the setting in the active BLUE BOX up or down. To activate a different field, simply touch it and it will turn BLUE to indicate that it is now active.



3. **START** When you are satisfied with your adjustments, press "**START**" to begin the program.

Once the program is in progress, the screen will indicate which stage the program is in.



Upon completion, the Controller Screen will indicate "COMPLETE".



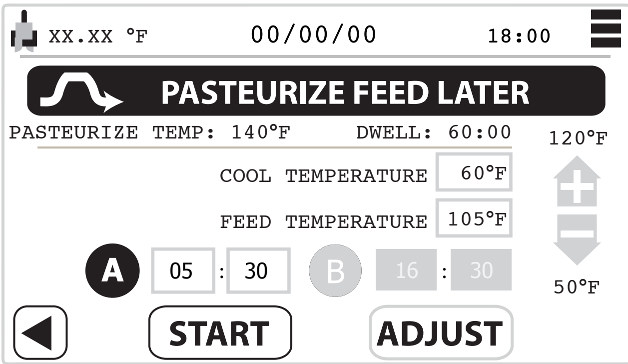
Pressing the "HOME" button will take the operator back to HOME screen.



FEED LATER MILK ONLY

Selecting the "**Feed Later Milk Only**" Pasteurization Option will allow you to pasteurize milk and feed later at a specified time.

A screen will show all the parameters of the last "FEED LATER MILK ONLY" program ran.



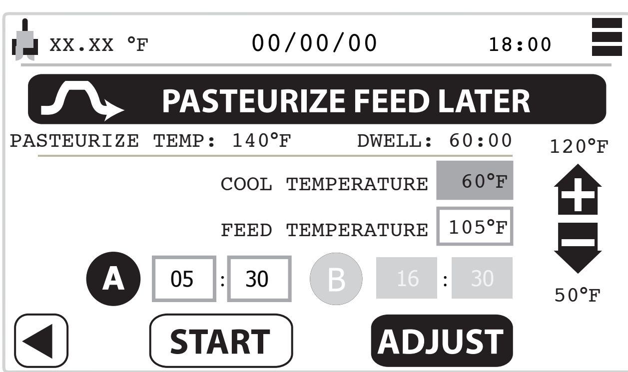
You have 3 choices: BACK, ADJUST or START

1. Press "**BACK**" button and return to the "Pasteurize" menu to select from one of the other 3 options

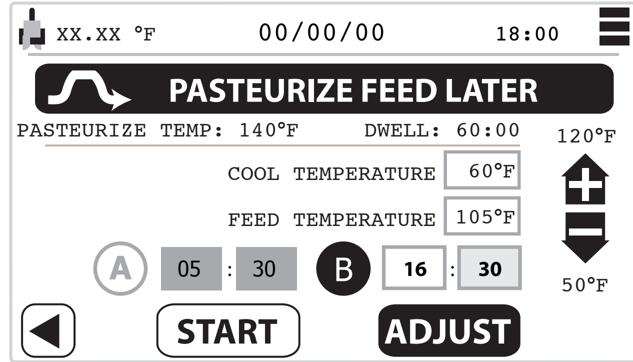
2. **ADJUST** Press "**ADJUST**" to change the current settings.

Adjusting Program Settings

Pressing the "ADJUST" button will highlight all available adjustments that can be made to the current program. A BLUE BOX will indicate the current active fields to be adjusted.



Use the arrow buttons to adjust the setting in the active BLUE BOX up or down. To activate a different field, simply touch it and it will turn BLUE to indicate that it is now active.



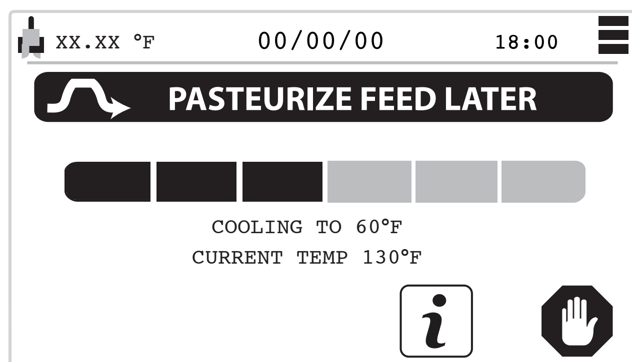
There are 2 options for START TIME, "A" and "B". This gives you the ability to set up 2 program start times - for instance, a morning feed and an evening feed.

This is an either "A" or "B" option, not both at the same time. After you run Option A in the morning, you will need to select Option B to have this machine ready for the second feeding.

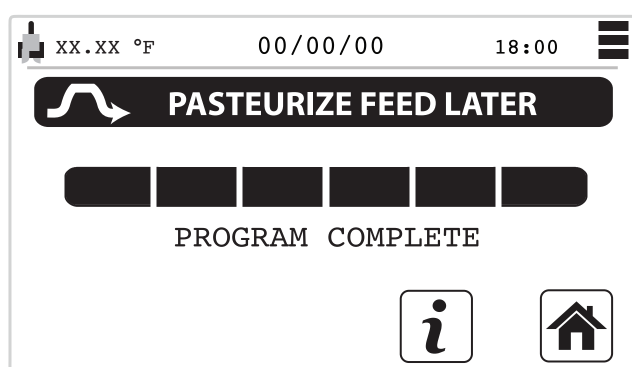
NOTE: Be aware that if the desired Time to warm the milk is missing, the machine will continue running. **

3. **START** When you are satisfied with your adjustments, press "**START**" to begin the program.

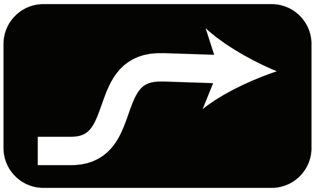
Once the program is in progress, the screen will indicate which stage the program is in.



Upon completion, the Controller Screen will indicate "COMPLETE".



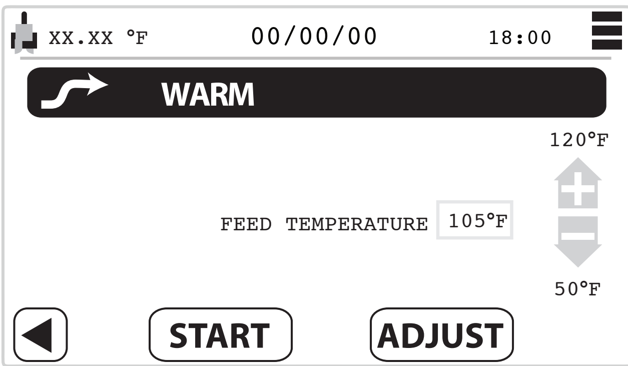
Pressing the "HOME" button will take the operator back to HOME screen.



WARM

Warm is to be used when you would like to warm pasteurized milk or colostrum to a feeding temperature.

Pressing the "WARM" button will open a new screen with the WARM Header showing all the parameters of the last WARM program ran.



You have 3 choices: BACK, ADJUST or START

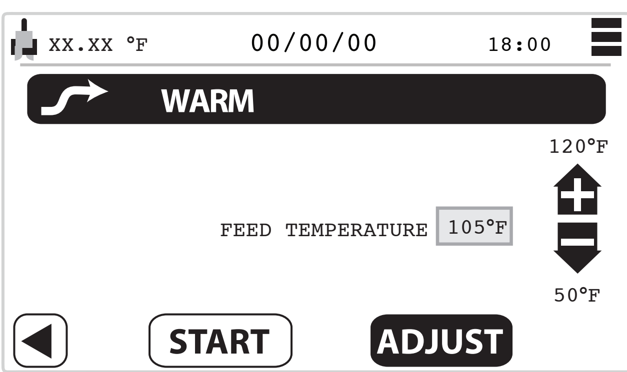
1.  Press "**BACK**" button and return to the "Pasteurize" menu to select from one of the other 3 options

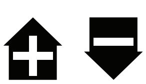
2. 

Press "**ADJUST**" to change the current settings.

Adjusting Program Settings

Pressing the "ADJUST" button will highlight all available adjustments that can be made to the current program. A BLUE BOX will indicate the current active field to be modified.

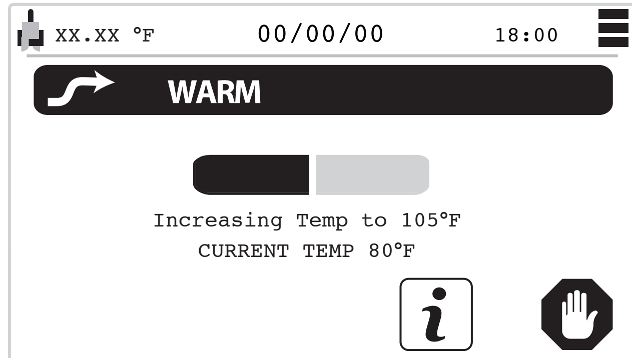


 Use the arrow buttons to adjust the setting in the active BLUE BOX up or down.

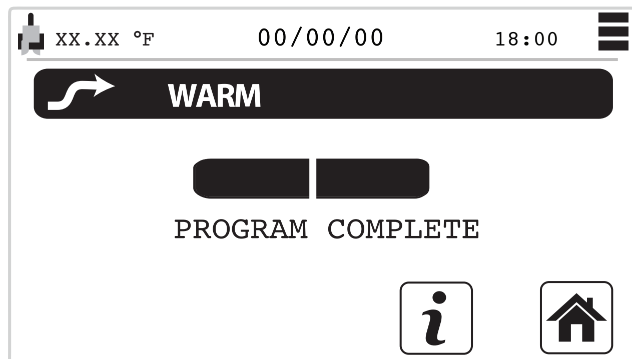
3. 

When you are satisfied with your adjustments, press "**START**" to begin the program.

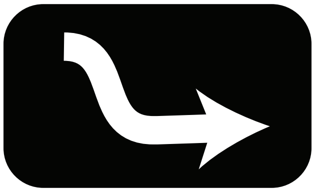
Once the program is in progress, the screen will indicate which stage the program is in.



Upon completion, the Controller Screen will indicate "COMPLETE".



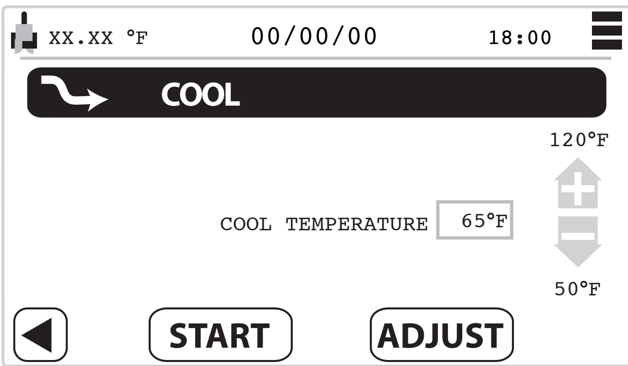
 Pressing the "HOME" button will take the operator back to HOME screen.



COOL

Cool is to be used when you would like to cool pasteurized milk or colostrum to a lower temperature for storage or to be held for a later feeding.

Pressing the "COOL" button will open a new screen with the COOL Header showing all the parameters of the last COOL program ran.



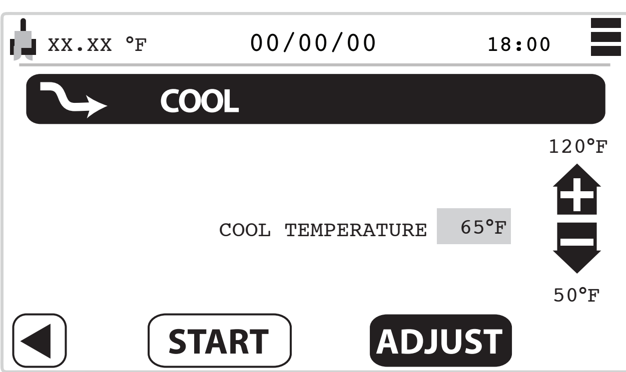
You have 3 choices: BACK, ADJUST or START

1. Press "**BACK**" button and return to the "Pasteurize" menu to select from one of the other 3 options

2. ADJUST — Press "**ADJUST**" to change the current settings.

Adjusting Program Settings

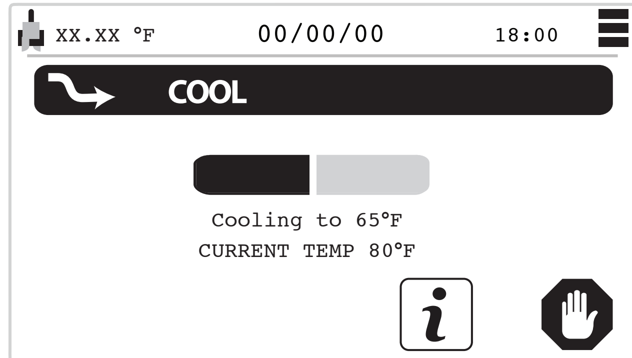
Pressing the "ADJUST" button will highlight all available adjustments that can be made to the current program. A BLUE BOX will indicate the current active field to be modified.



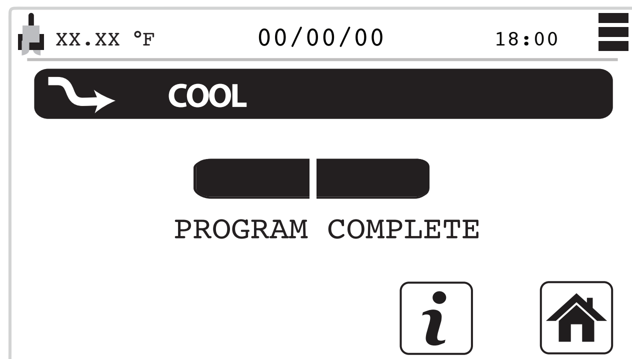
Use the arrow buttons to adjust the setting in the active BLUE BOX up or down.

3. START — When you are satisfied with your adjustments, press "**START**" to begin the program.

Once the program is in progress, the screen will indicate which stage the program is in.



Upon completion, the Controller Screen will indicate "COMPLETE".



Pressing the "HOME" button will take the operator back to HOME screen.

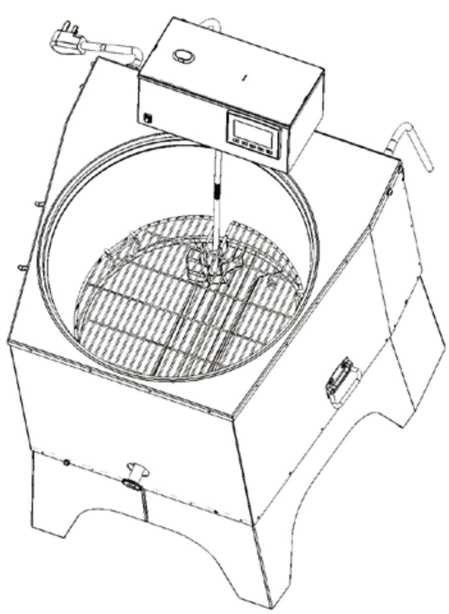
INSTALLATION AND USE OF A BAG GUARD

A Perfect Udder bag guard is included with each pasteurizer. Perfect Udder® is a unique colostrum management system in a bag. This allows for collection, pasteurization, storage and feeding of correct amounts of colostrum in a timely manner to your calves.



The purpose of the bag guard is to protect the colostrum bags from contacting the propeller of the machine. The guard is to be used only when Perfect Udder® bags are being pasteurized in a batch of milk or a water bath. Always be certain to choose a profile of 140°F (60°C) for 60 minutes for colostrum. Clean the bag guard thoroughly after each use.

DO NOT LAY BAGS ON DRY RACK. USE OF THE BAG GUARD WITHOUT ENOUGH WATER OR MILK TO SUBMERGE THE BAG(S) WILL NOT ALLOW THE PASTEURIZER TO FUNCTION PROPERLY AND WILL DAMAGE THE HEATERS OF THE UNIT.



QUALITY CONTROL AND SYSTEM MONITORING

The following recommendations should be carried out when the system is first installed and then on a monthly schedule to make certain that the pasteurization process is working adequately.

1. Follow all instructions for proper installation by thoroughly reading the manual.
2. Use quality milk and colostrum in the machine. The process can be overwhelmed if there are too many bacteria to begin with.
3. Handle the milk cleanly after pasteurization to prevent recontamination.
4. Verify display temperatures periodically with a second thermometer to be sure that the displayed reading matches closely with a trusted calibrated source.

TIME & TEMP FOR PROPER PASTEURIZATION

- **Milk 145°F(63°C)/30 minutes or 161°F(72°C)/30 seconds**
- **Colostrum 140°F (60°C)/ 60 minutes**

THESE ARE THE RESEARCH RECOMMENDED COMBINATIONS BUT WE RECOMMEND ALWAYS USING THE COLOSTRUM SETTINGS TO PROTECT THE SMALL AMOUNT OF IMMUNOGLOBULIN THAT IS IN NORMAL MILK EVERYDAY.

HELPFUL HINTS FOR SUCCESSFUL PASTEURIZATION

Time pasteurization so that it happens as quickly as possible after harvest of the milk or colostrum. If pasteurization is not going to be started for more than a couple of hours, it will be important to first cool the milk or colostrum so that spoilage and pathogenic bacteria do not multiply in the product.

1. Will I need to add anything to the milk after it has been pasteurized?

Not Usually. There are certain vitamins that are heat sensitive and may be decreased in concentration due to the pasteurization process but to our knowledge, no cases of deficiency or hypovitaminosis have been attributed to proper pasteurization. There may be circumstances due to regional or farm-specific conditions that would dictate supplementation of vitamins, minerals or even added fat/ protein. Always check with your local veterinarian if there are such suspicions and treat according to their instructions.

2. What if the milk becomes spoiled before I pasteurize it?

This condition is fairly common and can happen at times even when the same successful routines have been followed. There are spoilage bacteria in milk and colostrum that release acid as their by-products. This is usually lactic acid but there are also others. The release of acid from these proliferating bacteria then drives down the pH of the milk making it more acidic. Once the product is pasteurized it is safe for the calves to drink, but this can lead to rancid odors and flavors that might decrease consumption by the calves. Digestibility might also be different which can lead to scours. In cases of severe drop in pH, the milk will separate completely with a very thick layer of "cheese" on top or thick like pudding throughout the product. This is not due to overheating, it is due to the fact that protein denaturation and separation is made worse by the added heat of the pasteurization process. Heat combined with spoiled milk of low pH is a bad recipe which is why we recommend that you always try to pasteurize as soon as possible after harvest.

3. What is the optimal routine for handling milk?

We recommend that milk and colostrum be pasteurized immediately after harvest and then either fed at once or cleanly transferred to a refrigerated holding vessel. The milk can then be warmed to body temperature prior to feeding.

4. Are there ways to preserve the milk or colostrum if refrigeration is not an option?



Yes. Potassium sorbate and other preservatives can be added to milk or colostrum that is already pasteurized and this will help to prevent the growth of any remaining bacteria in the product. It is important to note that K-sorbate will not kill existing bacteria but will prevent any new growth. Do not add it prior to pasteurization as it will cause a lower pH and the symptoms described above including thickened or separated product and bad flavors.

5. Do I need to add milk extenders when using waste milk on the dairy?



This will depend on the fluctuations in the milk supply. It is best to test the total solids of the waste milk to see what the average looks like over a one week period. If total milk solids are too low you may want to discuss with your veterinarian whether to add an additional feeding or add more solids in the form of powder to your waste milk. Our recommendation is 3 feedings per day of quality pasteurized whole milk.

6. Will I harm immunoglobulins if I pasteurize colostrum?

NO. When done properly colostrum can be successfully pasteurized to eliminate the same pathogens that can be found in the milk. These pathogens are even more dangerous in colostrum since these bacteria and viruses can easily pass through the gut wall along with the large proteins that impart immunity to the calf. Colostrum can be safely pasteurized at 140F for 60 minutes to remove all pathogens without significant damage to immunoglobulins. Colostrum pasteurization should be as much a part of herd biosecurity as milk pasteurization.

TROUBLE SHOOTING COMBI PASTEURIZERS

- **This guide is intended for use as a troubleshooting directive. All electrical tests and diagnostics should be performed only by those skilled in the electrical profession**
- **All electrical testing and repairs should be performed by an experienced professional or technician trained in the electrical trade**
- **Serious injury or death may result from improperly testing or handling this equipment**
- **This unit contains HIGH VOLTAGE electricity that can cause serious harm or death**



All parts can be ordered at our website

www.DairyTechInc.com

1. **No Power to the Control Panel**
   a. Check to be certain unit is plugged into 240vac outlet and that there is power at the outlet.
   b. Be certain that breakers in panel box are not tripped
      i. If the breakers are being tripped, the system is likely being shorted to ground. Look for any blown fuses to indicate trouble areas and consult the fuse layout for more detail. Have the system checked by a certified electrician before operating.
      ii. Also check the heating element fuses located behind the rear panel.
   c. Check fuses 1 & 2 on the back of the control panel. These are the Line 1 and Line 2 supply fuses. If blown, replace with appropriate fuse. DO NOT REPLACE WITH OVERSIZED FUSES.
   d. Check the toggle switch to see if it is lit when switched on. This should indicate that power is getting to the switch. Check for 240vac power between the bottom switch terminals. Once the switch is flipped check for 240VAC at the top two terminals on the switch. Replace if necessary.
   e. The control itself could be malfunctioning or internally damaged. This is only rarely seen. Call for assistance.

2. **Milk Does Not Heat.**
   a. Heat components: Control calls for heat by signaling the SS Relays for each element separately. The elements are also wired through the heater Hi-Limit Thermostat on the back of the tank.
   b. Is there power getting to the SSRs? Check voltage from Pin 1 on each SSR back to L2. This tells us if power to the SSR. Once activated, check 240VAC power from Pin 2 on the SSR to be certain the relay is closing. If no power, check the breaker but power will also be off to the unit.
   c. Is the DC signal from the control arriving at the SSR at pins 3 & 4? Check across these pins for 24VDC and troubleshoot controller if no signal here during heating cycle. See diagram.

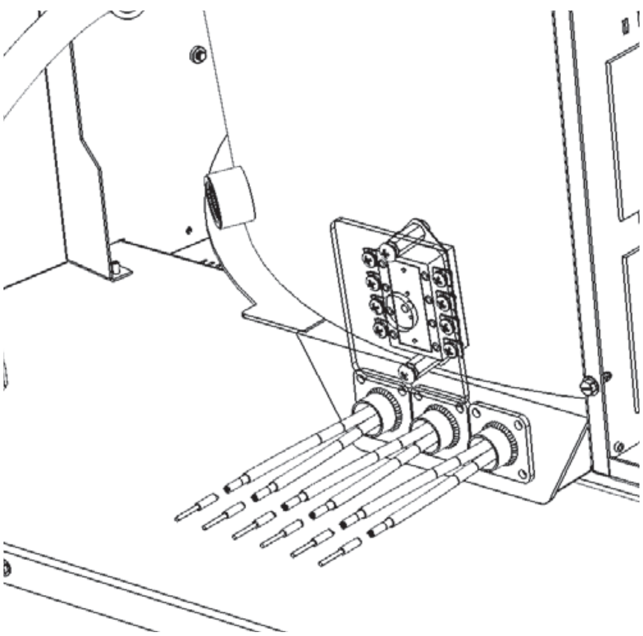
3. **240vac is Getting to the Heating Elements but Still No Heat.**

   a. Check for continuity through the heating elements. If no continuity, replace the heating element with the included spare or order a replacement from Dairy Tech, Inc.

   HEATING ELEMENTS: The heater elements are replaced when necessary by removing the back panel after disconnecting all power to the unit. Electrical connections to the elements are disconnected from the relays and thermostat. Loosen the 4 bolts that attach the heating element. Use caution when removing to retain the O-ring which is necessary for installation of the replacement element.

   Take this opportunity with the element out of the hole to inspect for excessive amounts of deposits in the heater reservoir. Flush deposits out with a hose. If severe, the unit can be tipped forward at a slight angle and a gallon of vinegar can be poured into the element hole until it is full. This acid will help to remove other deposits in the heater reservoir and on other elements. Leave vinegar in place for several hours for best results. Severe deposits may also warrant the installation of a water softener for this piece of equipment.

   Replace the element using the O-ring and reconnect the wires the opposite of their removal.



4. **Milk Does Not Get to Temperature, but the Heater is Hot or Heats Slowly.**

   a. There are two (2) or three (3)active heating elements in each unit depending on the model. Check resistance on each element with the power off to determine if one needs replacing.

   b. Make certain that the agitator motor is turning during the cycle. It should be on during heating, timing, and cooling cycles. Replace if it is not working.

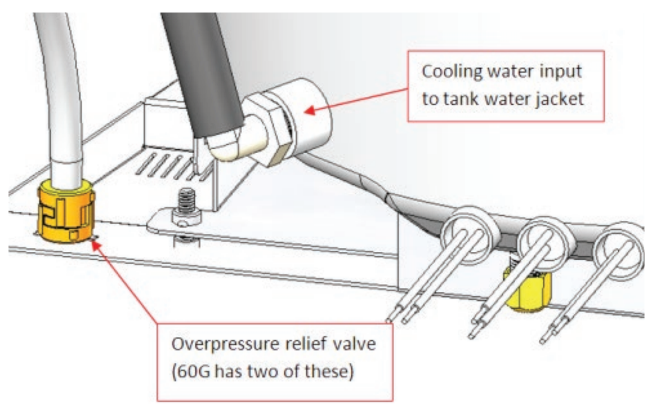
   c. Check the bottom of the milk tank to make certain that it is being cleaned properly after each use. If there is milk build up or significant sticking, the unit is not being cleaned properly and heat transfer will be decreased, but more importantly, this is a prime opportunity for pathogens to grow.

   d. Milk level is not high enough. The thermocouple needs to be fully covered in milk as it measures milk temperature at the tip. Also, too little milk will not allow optimal stirring which will decrease heat transfer and give false temperature readings.

   e. Cold water is coming into the system. If there is a leak in the system, such as a leaking cold water solenoid valve, the heater cannot keep up and the milk will not heat properly. Repair the leak or replace the valve.

5. **Water is Leaking Out of the Bottom of the Unit**

   a. Look under the machine on the sloping back floor, right side as you face the machine from the front. There is a pressure relief valve located here that will purge water if the drain line becomes occluded or pressures to the tank are too high. Check that the line is not blocked or kinked. *See diagram below*



6. Milk Will Not Cool

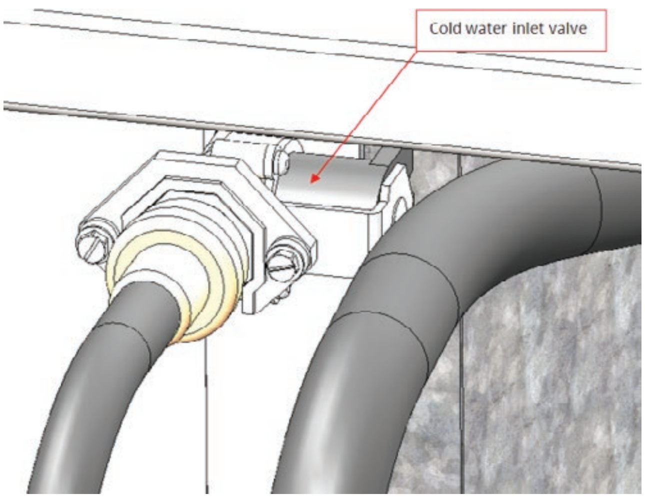
a. At the end of the heating and time-out cycle, the cooling solenoid valve should automatically open and allow water to drain from the machine.

   i. Make certain the discharge drain is not blocked, kinked or obstructed with back pressure of any kind

   ii. Make certain the cold water supply to the unit is always on … it is common to find that someone has shut the valve not knowing its importance.

   iii. Make certain that the user did not initiate a "Heat Only" cycle after which the unit does not cool the milk automatically. Use the "Full pasteurization cycles" to make sure it goes through all steps.

b. Check the cooling solenoid valve.



   i. Troubleshoot valve by pressing SETTINGS – MANUAL – then WATER VALVE. Is there power to the solenoid valve? If the power is on and the machine has water but it will not flow, replace the valve.

   ii. No power to the valve: Check the Circulation fuse (F3). Replace if necessary and check for power to the fuse from the control.

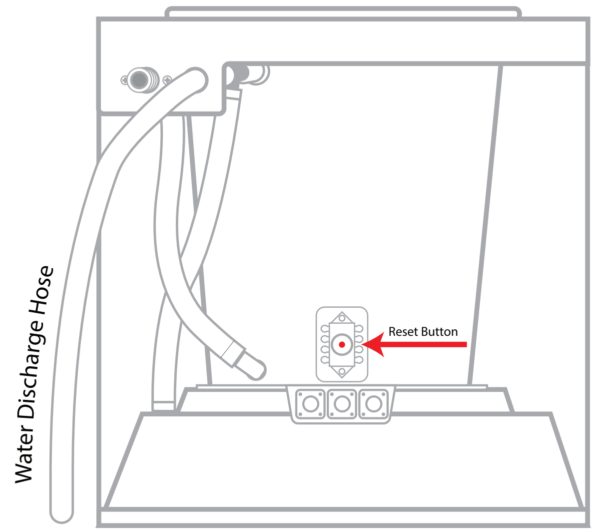
c. Check the water supply to make sure screens and filters are free from debris and kinks in the hoses.

7. Error Messages

a. **Jacket Water Not Detected**
This error message indicates that there is not enough water in the water jacket to function properly. ***Follow the "Charge the System" instructions on page 13.***

b. **Water Heaters Over Temperature**
This error message indicates that there is a failed sensor *(thermocouple wire)*, broken connection, or an internal input circuit has failed. Check the thermocouple wire and the connections into the back of the control at terminals #2(purple +) and #3(red -).

Step 1: Unplug machine from power source. After machine is safely unplugged, remove the back panel and locate the "Thermostat Re-Set Button" and press it one time.



Back of Pasteurizer

Step 2: If the error message returns, replace thermocouple.

c. **Error Loggin Card**
This error message indicates that the SD card is not inserted properly or has failed.

Step 1: Unplug machine from power source. After machine is safely unplugged, remove the top of the Control Box and locate the SD card. Check connection by gently pressing the SD card into place. It should "Click" into place. If connection is correct, your SD card may have failed

Step 2: If the card does not fasten properly or becomes unreadable, please contact Dairy Tech, Inc to order a new SD card. These cards are pre-formatted to work with our new Touch-Screen controller. *Regular off-the-shelf SD Cards will not work.*

8. **Temperature Display is Erratic or Incorrect.**

   a. **Troubleshooting <u>the thermocouple system</u>**
   The thermocouples are polar sensitive and will yield erratic numbers, or even move down in temp when the process is heating, if they are wired in reverse. The unit may also flash an unusually high number and then immediately indicate that the cycle has ended. Make certain that purple or white leads are positive (+) and red leads are negative (-) at all junctions.

9. **Milk is Separated or Congealed**

   a. The most common cause for milk or colostrum to separate or congeal is acidification of the milk caused by two processes:

      i. Fermentation of the milk by bacteria will cause the release of lactic acid and other acidic by-products resulting in a lower pH of the milk. This in turn allows it to separate. The heat of pasteurization will exacerbate this problem. To control this, cool the milk during holding stages or pasteurize the milk sooner after collection to prevent the start of fermentation.

      ii. Acidic cleaners are not being rinsed from the system. Rinse properly before each use. Dairy Tech, Inc. does not reccomend using acids to clean as this can cause severe damage to the cabinet and pose a safety risk for the employees.

   b. Thickened milk or colostrum that is stuck to the tank may be due to:

      i. Improper stirring (make certain the propeller is moving during heating, time out and cooling cycles)

      ii. Temperatures that are too high (rarely a problem since our units cannot superheat water).

10. **Stir Motor is NOT Turning**

    a. Check the fuse for the motor F3

    b. If the fuse is good, make certain that the wire to the motor has not been damaged or pulled out of the terminal block high.

    c. If there is power to the motor and it will not turn, replace the motor.

    d. If there is no power to the motor and the fuse is good, check the control.

11. **Delay Start Does Not Come On Automatically**

    a. Call for instructions to make certain the clock is set for the correct time of day.

    b. Make certain that the steps for using the delay start are being followed exactly.

    c. The control output could be damaged.

12. **Cycle Starts Automatically When Toggle Is Switched On**

    a. Following a brief power failure - less than 5 minutes - your pasteurizer is equipped with a security feature that reminds it to come back on to its last unfinished cycle once power is restored. This will also occur if someone shuts the unit off prior to completion of its assigned cycles, and the unit will automatically restart when the toggle switch or power is restored. If a long time period has elapsed, the control will reset itself, if not it will restart and must be reset by using the ABORT PROFILE command as listed on the control.

13. **Cooling Solenoid Valve Will Not Stop Running**

    a. Check the power supply to the valve. IF there is power keeping it open during unwanted times, the control could be malfunctioning, especially if the cold output LED # is on at the wrong times. Replace Control.

    b. It is possible that some debris has held the solenoid open. Disconnect power and remove tubing from valve inside cabinet. Blow into the supply hose to eject any debris from the valve or force water backward through the valve. The valve may need to be replaced if it is powering properly but not closing when the solenoid closes.

For parts list and ordering
visit www.dairytechinc.com

You may also see the last pages of this user manual.

Contact Dairy Tech, Inc.

Dairy Tech, Inc.
34824 CR 29
Greeley, CO 80631

Toll Free:	**1-866-384-2697**
Local:	**1-970-674-1888**
Fax:	**1-970-686-5871**
Hours:	**M – F 7am – 4pm, MST**
Web:	**www.DairyTechInc.com**
eMail:	**office@DairyTechInc.com**



Perfect Udder®
COLOSTRUM MANAGEMENT SYSTEM

The Perfect Udder® Colostrum Management System is the solution for handling colostrum, from harvest to feeding, without fear of re-contamination. Our patented design allows the colostrum to be pasteurized, refrigerated, frozen, warmed and fed through a nipple or esophageal feeder ***all from the same bag***.



Perfect Udder® KITS

Perfect Udder® Colostrum Management Kit contains:

- **50 Colostrum Bags** *(2L, 3L, or 4L)*
- **3 Nipple Assemblies**
- **1 Nipple Assembly Tool**
- **3 Standard Feed Tubes**
- **5 Freezer Sheets**

CUSTOMIZED KITS ALSO AVAILABLE

Create your own kit. Choose the bag volume *(2L, 3L or 4L)*, then select your choice of feeding attachments:

- ❍ **3 Nipple Assemblies**
- ❍ **5 Standard Feed Tubes**
- ❍ **3 Nipple Assemblies & 3 Standard Feed Tubes**
- ❍ **3 Nipple Assemblies & 2 Deluxe Feed Tubes**
- ❍ **3 Deluxe Feed Tubes**
- ❍ **Bags Only**

Sample kits available upon request!

Perfect Udder® ACCESSORIES



STANDARD ESOPHAGEAL FEED TUBES
10 Pack 20" length



DELUXE ESOPHAGEAL FEED TUBES
5 Pack 50" length includes pinch clamp and flexible section for flow control



NIPPLE ASSEMBLIES
5 Pack of nipple assemblies



BAG GUARD COMBI PASTEURIZER
10G, 30G, 60G
Stainless steel guard prevents the Perfect Udder® bags from being damaged by the agitator in our Combi Pasteurizers.



BAG CADDY
Turns any Perfect Udder® bag into a rigid bottle for easy handling at the calf. Easy to clean.

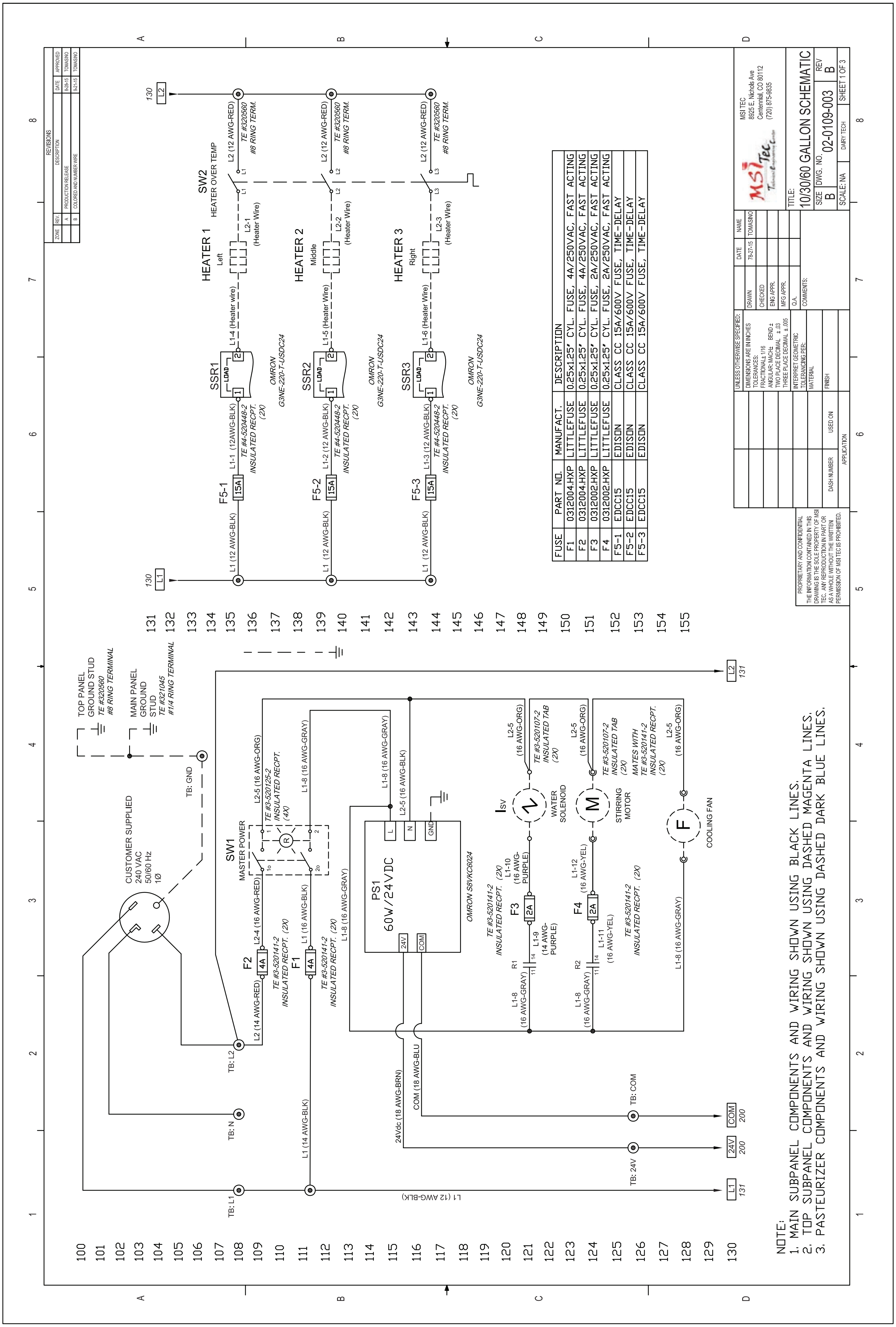


DELUXE BAG FILLER
Allows hands-free accurate filling of either the 3L or 4L bags. Just pour colostrum into the wide top opening to the required fill line and tilt to fill the bags. Easy to assemble and clean. Dishwasher safe.

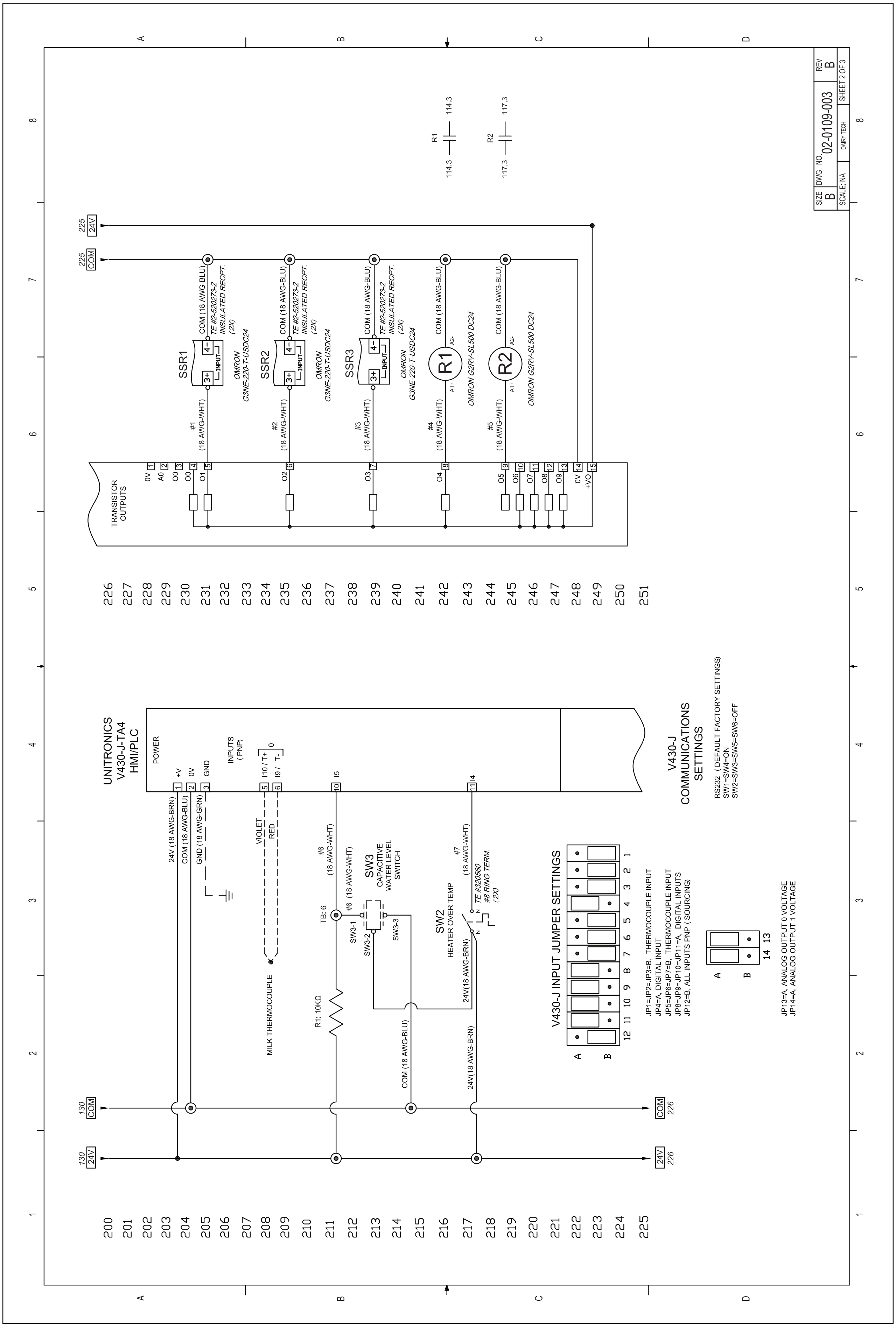


STANDARD BAG FILLER
Holds the Perfect Udder® bag and funnel for you while you fill.

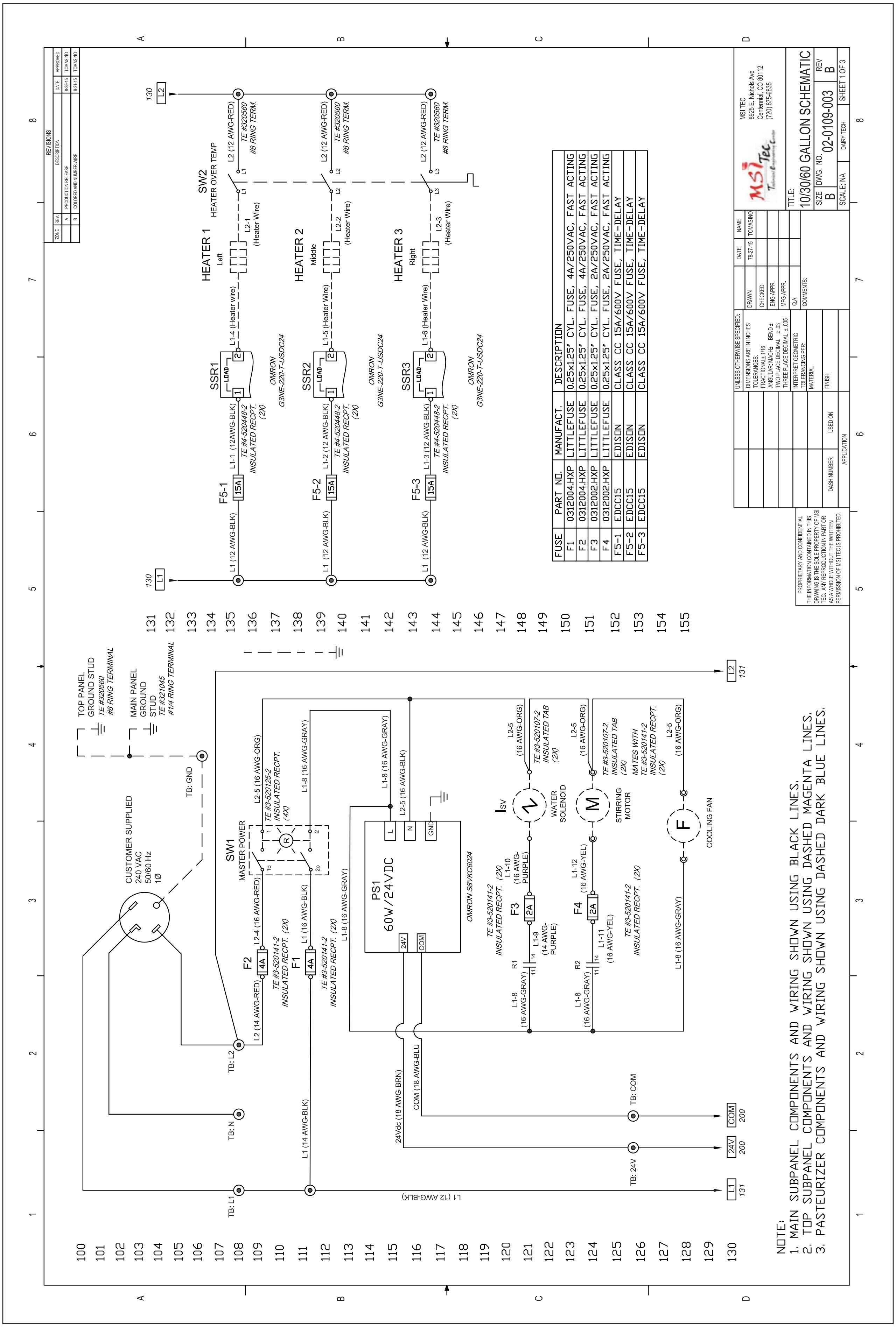
COMBI 10G/30G/60G SCHEMATIC



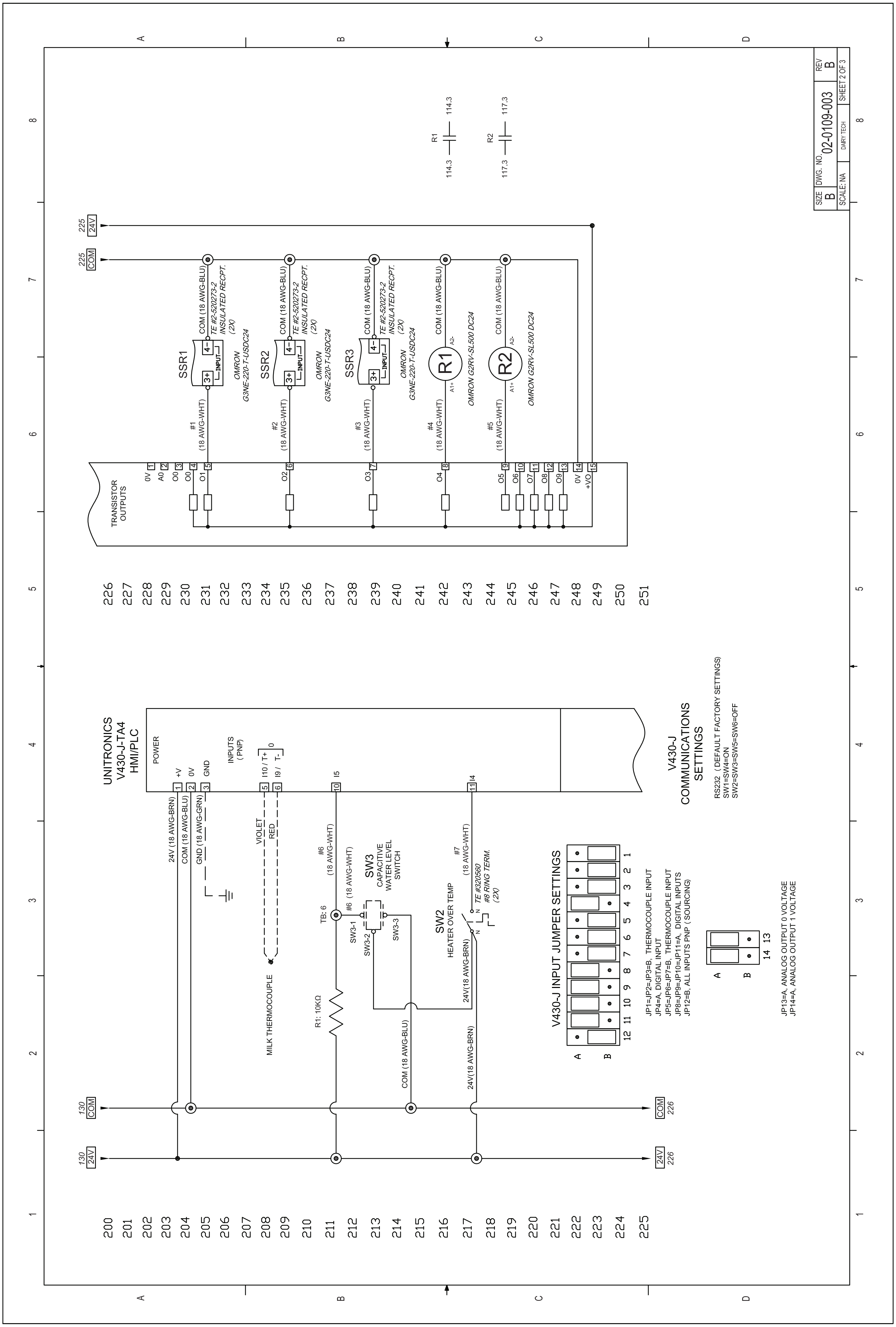
COMBI 10G/30G/60G Schematic

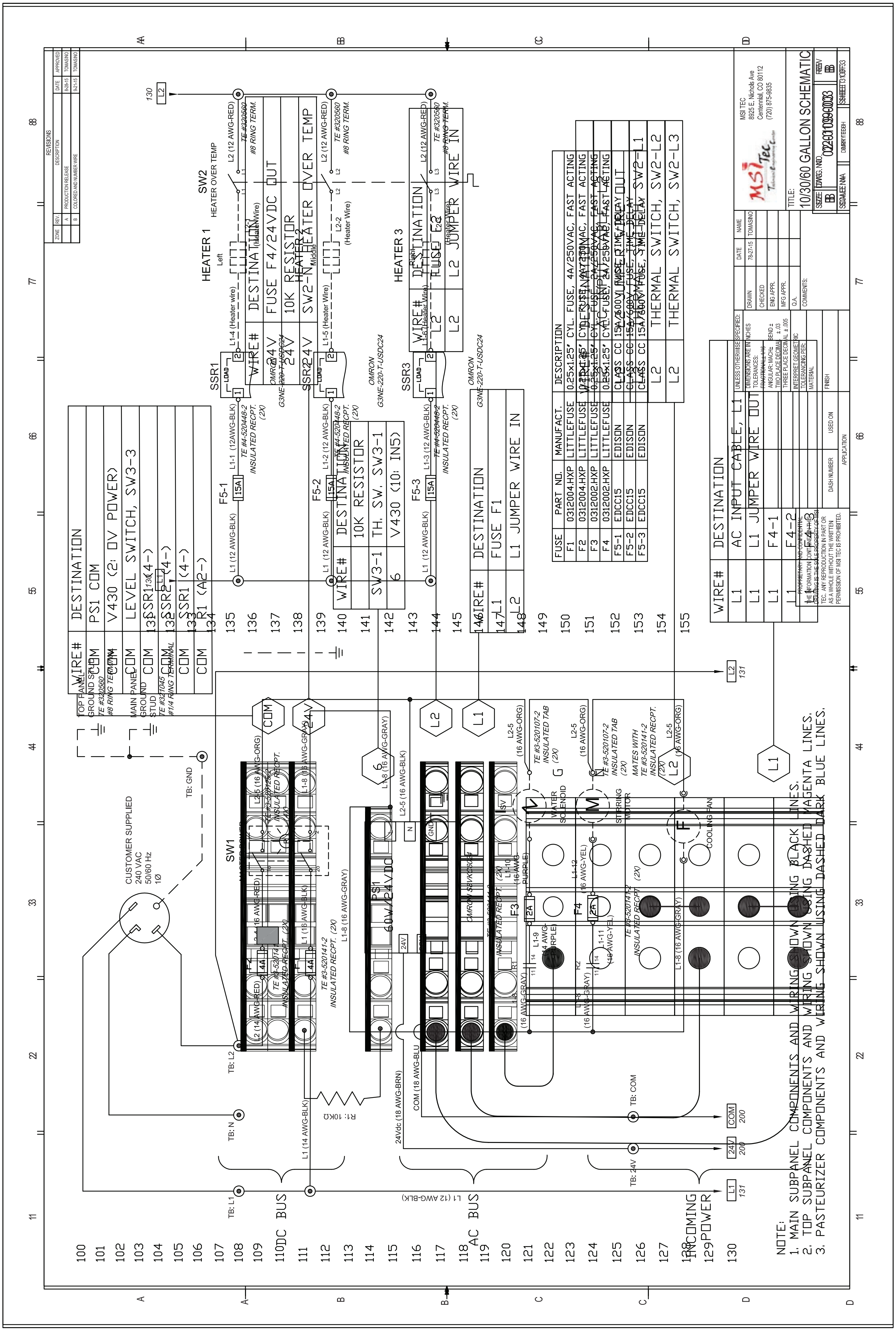


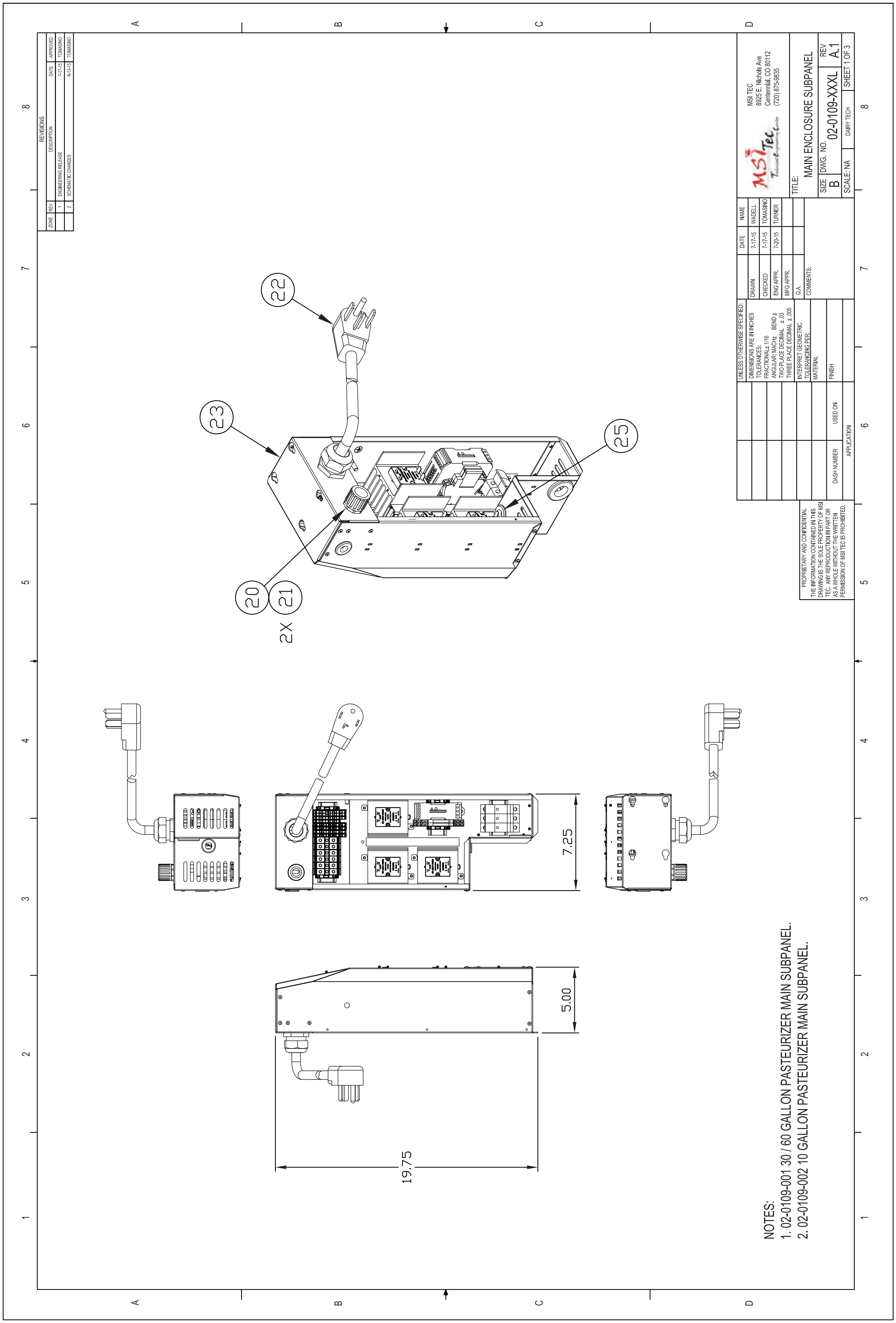
COMBI 10G/30G/60G Schematic



COMBI 10G/30G/60G Schematic

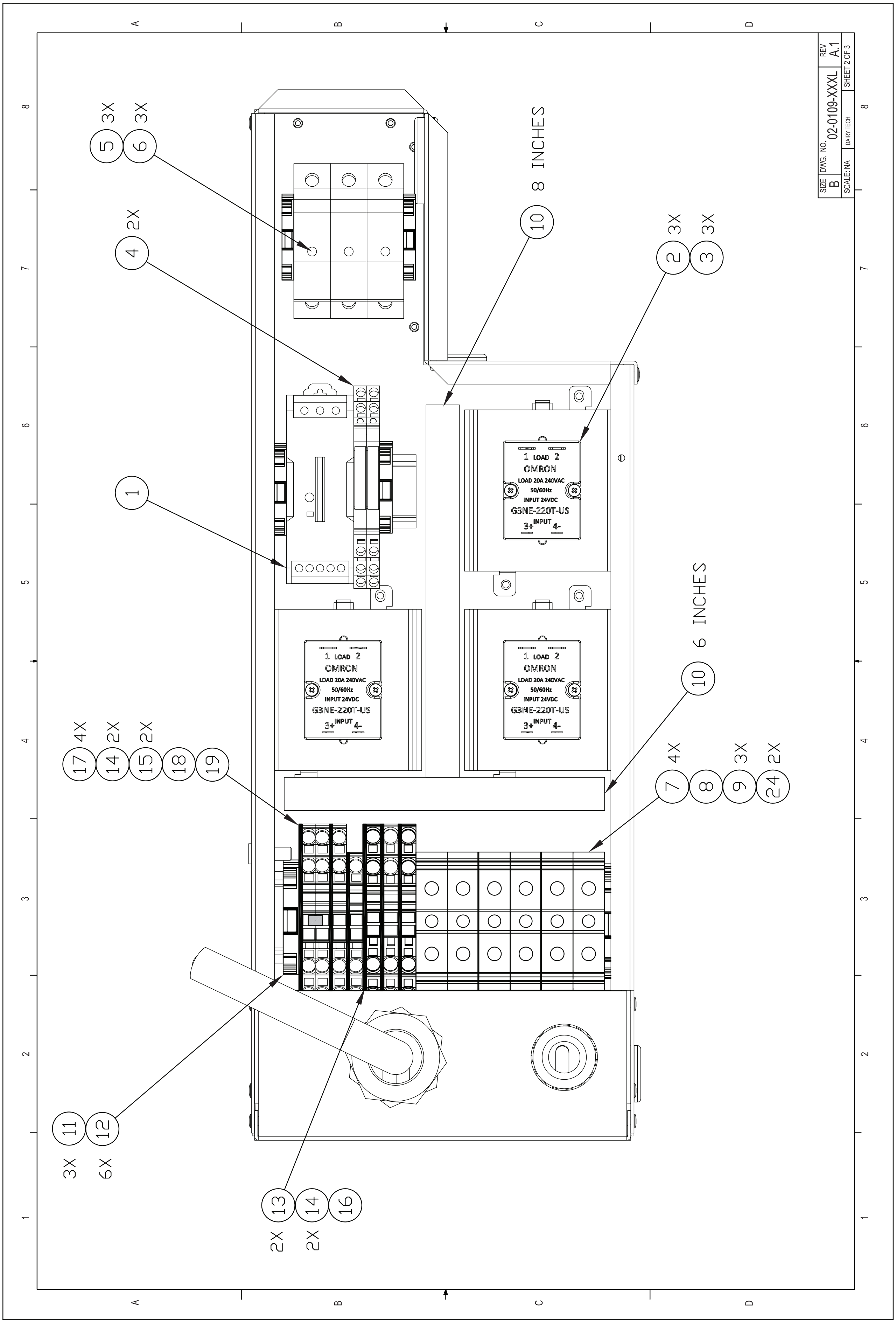



NOTE:
1. MAIN SUBPANEL COMPONENTS AND WIRING SHOWN USING BLACK LINES.
2. TOP SUBPANEL COMPONENTS AND WIRING SHOWN USING DASHED MAGENTA LINES.
3. PASTEURIZER COMPONENTS AND WIRING SHOWN USING DASHED DARK BLUE LINES.
DC BUS
AC BUS
INCOMING POWER
CUSTOMER SUPPLIED
240 VAC
50/60 Hz
1Ø
HEATER 1
HEATER 3
SW1
SW2
HEATER OVER TEMP
SSR1
SSR3
PS1
60W/24VDC
WATER SOLENOID
STIRRING MOTOR
COOLING FAN
MSI TEC
8925 E. Nichols Ave
Centennial, CO 80112
(720) 875-8835
10/30/60 GALLON SCHEMATIC



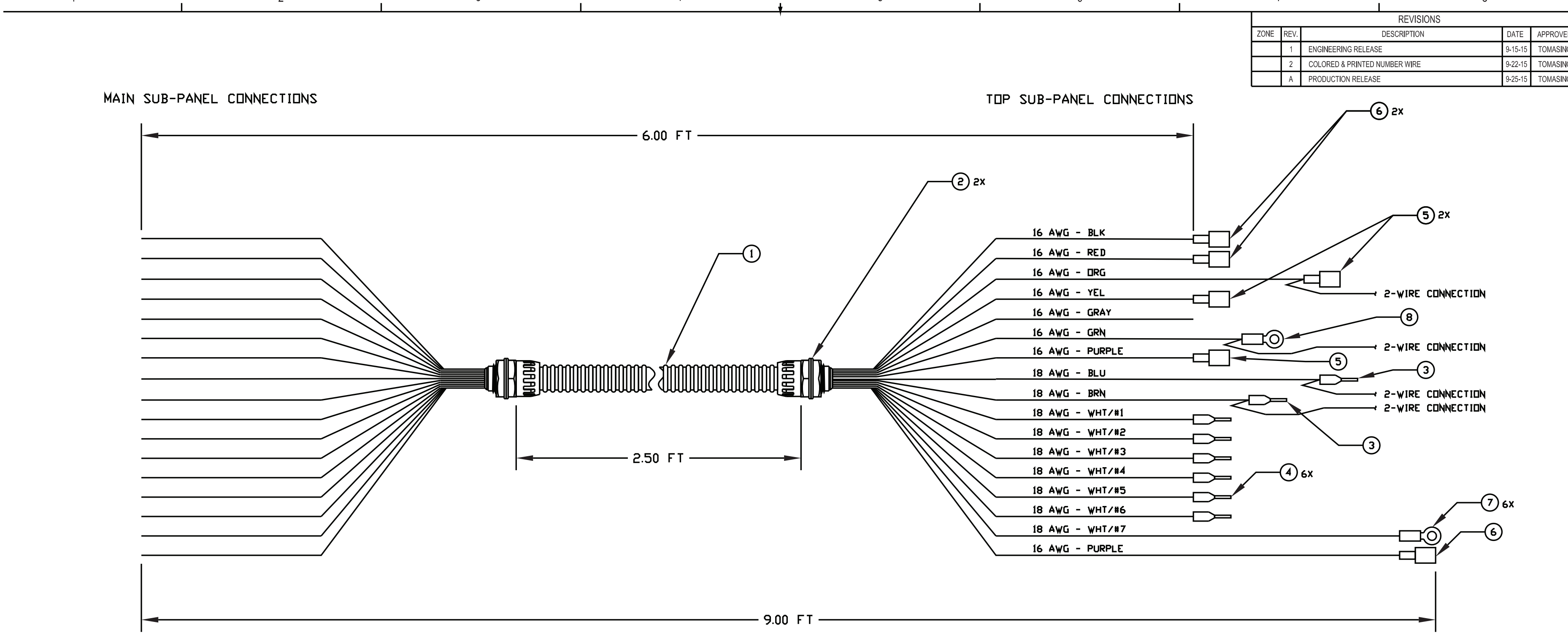
22
23
25
20
21
2X
7.25
5.00
19.75
NOTES:
1. 02-0109-001 30 / 60 GALLON PASTEURIZER MAIN SUBPANEL.
2. 02-0109-002 10 GALLON PASTEURIZER MAIN SUBPANEL.
MSI TEC
8925 E. Nichols Ave
Centennial, CO 80112
(720) 875-8635
TITLE:
MAIN ENCLOSURE SUBPANEL
SIZE B
DWG. NO. 02-0109-XXXL
REV A.1
SCALE: NA
DAIRY TECH
SHEET 1 OF 3

COMBI 10G/30G/60G Main Enclosure Subpanel



ITEM	QTY	MANUFACTURER	PART NUMBER	DESCRIPTION	U/M
1	1	OMRON	S8VKC06024	60W/24VDC POWER SUPPLY	EA
2	3	OMRON	G3NE220TUSDC24	SOLID STATE RELAY, ZERO CROSSING, 20A, 240VAC	EA
3	3	OMRON	Y92BN100	SSR HEAT SINK (-001 ONLY)	EA
4	2	OMRON	G2RVSL500DC24DC21	GP POWER RELAY, 24VDC COIL, SPDT, 6A	EA
5	3	EDISON	EHCC1DU	MODULAR FUSE HOLDER, CLASS CC	EA
6	3	EDISON	EDCC15	CLASS CC 15A FUSE	EA
7	5	KONNECT-IT	KN-T4GRY	SCREW-CLAMP TERM BLOCK, 4 AWG, GRAY	EA
8	1	KONNECT-IT	KN-G4	SCREW-CLAMP GROUND TERM BLOCK, 4 AWG, GRN/YEL	EA
9	2	KONNECT-IT	KN-ECT4GRY	KN-T4 END COVER, GRAY	EA
10	14	IBOCO	T1-0522G	½ X 2-1/4 WIRE DUCT, GRAY	IN
11	11.5	PHOENIX CONT.	0801733	DIN RAIL	IN
12	6	WAGO	249-116	END STOPS	EA
13	2	WAGO	2002-1401	4-COND TERM BLOCK, GRAY	EA
14	5	WAGO	2002-1492	4-COND TERM BLOCK END PLATE, ORANGE	EA
15	1	WAGO	2002-400	ADJACENT JUMPER, 2-POLE	EA
16	1	WAGO	2002-1407	4-COND GROUND TERM BLOCK, GRB/YEL	EA
17	3	WAGO	2002-1404	4-COND TERM BLOCK, BLUE	EA
18	1	WAGO	2002-1304	3-COND TERM BLOCK, BLUE	EA
19	1	WAGO	2002-1392	3-COND TERM BLOCK END PLATE, ORANGE	EA
20	2.5	IBOCO	GSI-16K	I-FLEX LIQUID-TIGHT TUBING, 1/2" ID, BLACK	FT
21	2	IBOCO	RPS-16K	I-FLEX LIQUID-TIGHT TUBING CONNECTOR, 1/2", BLK	EA
22	1	DAIRY TECH		240VAC POWER CORD	EA
23	1	DAIRY TECH		SHEET METAL ENCLOSURE, MAIN SUBPANEL	EA
24	2	KONNECT-IT	KN-2J4	2-POSITION JUMPER FOR KN-T4 TB	EA
25	1	KEYSTONE	749	RUBBER GROMMET, 0.5" ID, 0.75" HOLE SIZE	EA

SIZE	DWG. NO.	REV
B	02-0109-XXXL	A.1
SCALE: NA	DAIRY TECH	SHEET 3 OF 3



ITEM	QTY	MANUFACT.	PART NO.	DESCRIPTION	U/M
1	2.5	AUTO DIRECT	GSI-16K	LIQUID TIGHT TUBING, ½" ID, BLACK	FT
2	2	AUTO DIRECT	RPS-16K	LIQUID TIGHT TUBING CONNECTOR, STRT, ½" ID, BLK	EA
3	2	ALTECH	2776.0	DUAL WIRE INSULATED FERRULES, 18 AWG, RED	EA
4	6	WAGO	216-263	INSULATED FERRULES, 18 AWG, RED, 14mm	EA
5	3	TE CONNECT.	3-520125-2	INSULATED RECEPTACLES, 14-16 AWG, BLU, 0.187x0.032	EA
6	3	TE CONNECT.	3-520141-2	INSULATED RECEPTACLES, 14-16 AWG, BLU, 0.250x0.032	EA
7	1	TE CONNECT.	320560	#8 RING TERMINAL, 16-14 AWG, BLUE	EA
8	1	TE CONNECT.	321045	#¼ RING TERMINAL, 16-14 AWG, BLUE	EA

NOTE:
1. 18 AWG UL TYPE 1007/1569 WIRE, 300V, 105°C, 16/30 STRANDED.
2. 16 AWG UL TYPE 1007/1569 WIRE, 300V, 105°C, 26/30 STRANDED.

DASH NUMBER	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN INCHES
TOLERANCES:
FRACTIONAL± 1/16
ANGULAR: MACH± BEND ±
TWO PLACE DECIMAL ± .03
THREE PLACE DECIMAL ± .005
INTERPRET GEOMETRIC TOLERANCING PER:
MATERIAL
FINISH

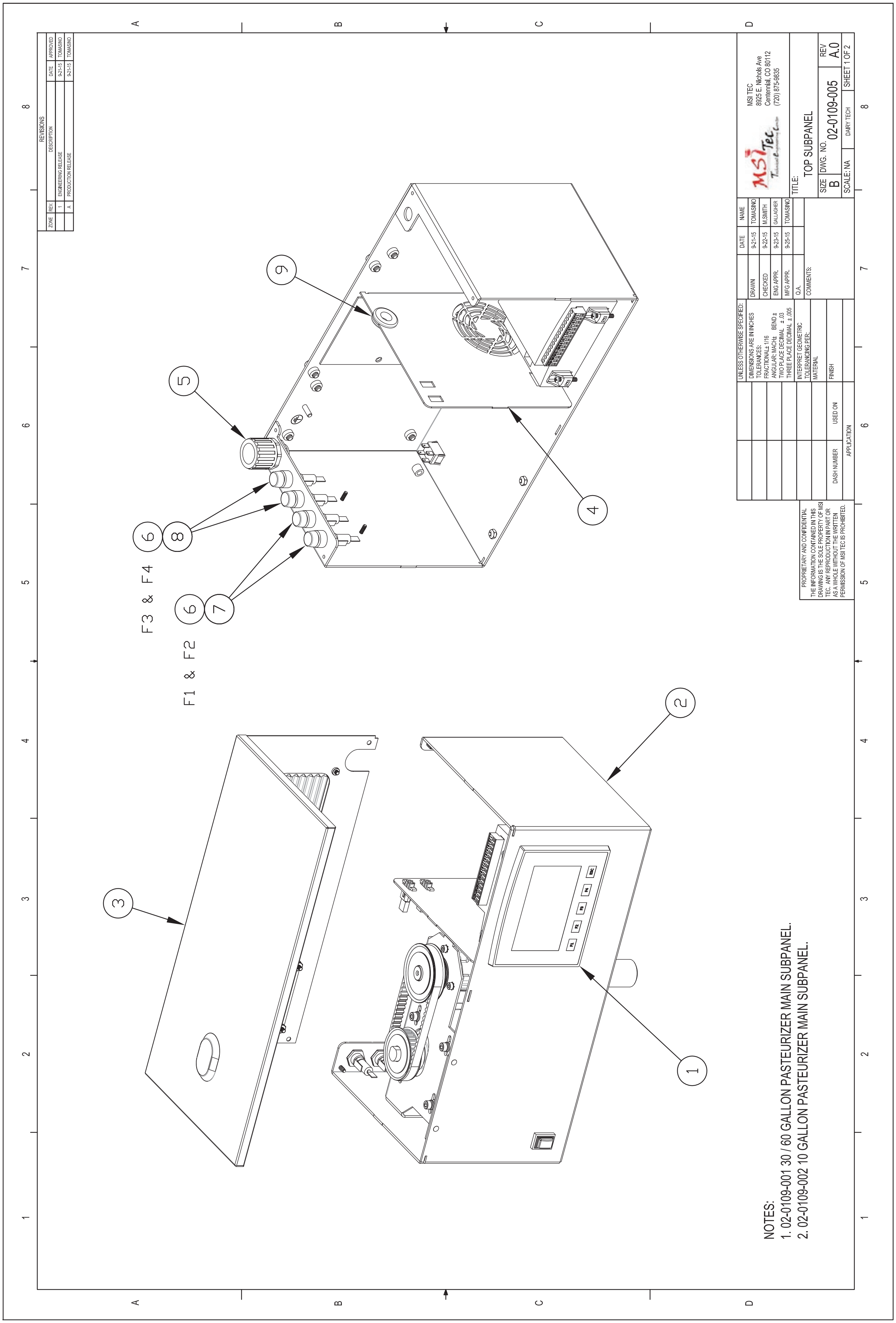
	DATE	NAME
DRAWN	9-1-15	TOMASINO
CHECKED	9-3-15	GALLAGHER
ENG APPR.	9-21-15	GALLAGHER
MFG APPR.	9-25-15	TOMASINO
Q.A.		

COMMENTS:

MSI TEC
8925 E Nichols Ave
Centennial, CO 80112
(720) 875-9835

TITLE: PANEL WIRING SCHEMATIC
SIZE B | DWG. NO. 02-0109-004 | REV A
SCALE: NA | DAIRY TECH | SHEET 1 OF 1

COMBI 10G/30G/60G TOP SUBPANEL



COMBI 10G/30G/60G Top Subpanel

ITEM	QTY	MANUFACTURER	PART NUMBER	DESCRIPTION	U/M
1	1	CTEC	2708-0318-001	UNITRONICS V430-J-TA24 SETUP W/ SOFTWARE	EA
2	1	DAIRY TECH	53409	CONTROL HOUSING UNITRONICS V430	EA
3	1	DAIRY TECH	53411	PLATINUM CONTROL CONTROL COVER, V430	EA
4	1	DAIRY TECH	53410	AIR DAM, SHEET METAL	EA
5	1	IBOCO	RPS-16K	I-FLEX LIQUID-TIGHT TUBING CONNECTOR, ½", BLK	EA
6	4	DAIRY TECH		0.25x1.25 FUSE HOLDERS	EA
7	2	DAIRY TECH	0312004.HXP	LITTLEFUSE 0.25x1.25 4A FUSE FAST ACTING	EA
8	2	DAIRY TECH	0312002.HXP	LITTLEFUSE 0.25x1.25 2A FUSE FAST ACTING	EA
9	1	KEYSTONE	749	RUBBER GROMMET, 0.5" ID, 0.75" HOLE SIZE	EA

SIZE	DWG. NO.	REV
B	02-0109-005	A.0
SCALE: NA	DAIRY TECH	SHEET 2 OF 2

10G REPLACEMENT PARTS

Part #	Description
BM-10G-Tank	10 gallon double walled stainless steel tank 2B finish inside with graduations. Model DT30G units
BH-LidSS	10G Milk Tank Lid
BE-Element1250-flange Apasteurizers 2014 and newer models	1250w teflon coated heating element flanged style for bolt-in to DT10G
ME-Control-Touch	Unitronics Touch Screen 430
ME-fan220v	220v AC Fan 1
ME-fanfilt	filter screen for AE-fan
ME-motorChainAssy240v	240vac chain drive motor assy
MP-valveSS1"	304SS 1.25" sanitary butterfly valve Assembly:
ME-switch220v	red toggle - led switch 220
MP-hose_Supply	3/4 GHTsupply hose
ME-corddryer	6' 4-wire dryer cord 30amp
BM-F02014-Shaft	10G Stir Shaft
BM-2015-10G_Prop	Stir Prop 10G
MP-valveclampSS1"	1" SS valve clamp
ME-tccolette	F01173A brass collets split compression fitting for thermocouples in Platinum Series/Combi pasteurizers
MP-valrelief	308312US-0430S020-2833 1/2 barb x 1/4NPT 5psi relief valve Used in all Platinum/Combi Series pasteurizers to relieve back pressure in double walled tanks.
DP-Hosebla	WHD H20108BK 1' WHD black 1/2"ID hose - *Sold by the foot (12")*
ME-Thermstat	NEW Image
MP-ValAppliance230v	230vac appliance solenoid valve, 3/4 GHT male X 12mm out, 1/4 male wire terminals for model 10G, 30G, 60G, and MilkWorks/12B Pasteurizer and Warmer Models.
MH-brushbottle	1.5 Nylon Brush with small end for narrow tube cleaning.
MP-Spigot	F02161B sanitary exit spout attachment for Stainless Steel flange 1"
JH-ferrule	NEW Image
BE-TC-2-G	NEW Image
ME-PowerSupply24VDC	60W 24VDC power supply 100-240VAC
ME-RelaySlim	SPDT 6A slim relay
ME-RelaySS-TabSSR	SSR 20amp - *solid state relay 20A used on most pasteurizer models prior to 2013*
ME-termBlock14AWG-Ground	ground terminal block
ME-TermBlock4awg-Ground	ground terminal block 4awg
ME-termJump2	terminal block 2-way jumper
ME-termJump3	terminal block jumper 3
ME-termJump4	4 way terminal block jumper
ME-termJumpLg	4awg terminal block jumper
3 Fuse Holder	

30G REPLACEMENT PARTS

Part #	Description
AM-30GTank	30 gallon double walled stainless steel tank 2B finish inside with graduations. Model DT30G units
AM-LidSS	Stainless steel lid for DT30G
BE-element1850-flange	1850w teflon coated heating element flanged style for bolt-in to DT30G pasteurizers 2014 and newer models
ME-Control-Touch	Unitronics Touch Screen 430
ME-fan220v	220v AC Fan 1
ME-fanfilt	filter screen for AE-fan
ME-motorChainAssy240v	240vac chain drive motor assy
MP-valveSS1”	304SS 1.25” sanitary butterfly valve Assembly:
ME-switch220v	red toggle - led switch 220
MP-hose_Supply	3/4 GHTsupply hose
ME-corddryer	6’ 4-wire dryer cord 30amp
AM-shaft30G	Stir Shaft - 30G 20inch
MM-2345_Prop30/60G	Stir Prop - 30G&60G
MP-valveclampSS1”	“1”” SS valve clamp”
ME-tccolette	thermocouple col
MP-valrelief	1/2 barb X 1/4 NPT 5psi relief
DP-Hosebla	“500” WHD Black 1/2” ID Hose
ME-thermstat	NEW Image
MP-ValAppliance230v	230VAC Appliance Solenoid Valve
MH-brushbottle	1.5 Nylon Brush
MP-Spigot	Cust Flanged Spigot 1” Stainless Steel
JH-ferrule	NEW Image
AE-TC-2.5-G	NEW Image
ME-PowerSupply24VDC	60W 24VDC power supply 100-240VAC
ME-RelaySlim	SPDT 6A slim relay
ME-RelaySS-TabSSR	SSR 20amp
ME-termBlock14AWG-Ground	ground terminal block
ME-TermBlock4awg-Ground	ground terminal block 4awg
ME-termJump2	terminal block 2-way jumper
ME-termJump3	terminal block jumper 3
ME-termJump4	4 way terminal block jumper
ME-termJumpLg	4awg terminal block jumper
3 Fuse Holder	

60G REPLACEMENT PARTS

Part #	Description
JM-tank60g	DT60G stainless steel tank with #2 polish, etched volume graduations, 3 heating tubes, double walled jacket and 1.25: flanged spout for milk exit.
JM-Lid-White	60G Milk Tank Lid
JE-Element 3000w flange	3000w teflon coated heating element flanged style for bolt-in to DT60G pasteurizers 2014 and newer models
ME-Control-Touch	Unitronics Touch Screen 430
ME-fan220v	220v AC Fan 1
ME-fanfilt	filter screen for AE-fan
ME-motorChainAssy240v	240vac chain drive motor assy
MP-valveSS1”	304SS 1.25” sanitary butterfly valve Assembly:
ME-switch220v	red toggle - led switch 220
MP-hose_Supply	3/4 GHT supply hose
ME-corddryer	6’ 4-wire dryer cord 30amp
jm-2548-StirShaft	60G Stir Shaft
MM-2345_Prop30/60G	Stir Prop - 30G&60G
MP-valveclampSS1”	“1”” SS valve clamp”
ME-tccolette	thermocouple col
MP-valrelief	1/2 barb X 1/4 NPT 5psi relief
DP-Hosebla	“500” WHD Black 1/2” ID Hose
ME-thermstat	NEW Image
MP-ValAppliance230v	230VAC Appliance Solenoid Valve
MH-brushbottle	1.5 Nylon Brush
MP-Spigot	Cust Flanged Spigot 1” Stainless Steel
JH-ferrule	NEW Image
AE-TC-2.5-G	NEW Image
ME-PowerSupply24VDC	60W 24VDC power supply 100-240VAC
ME-RelaySlim	SPDT 6A slim relay
ME-RelaySS-TabSSR	SSR 20amp
ME-termBlock14AWG-Ground	ground terminal block
ME-TermBlock4awg-Ground	ground terminal block 4awg
ME-termJump2	terminal block 2-way jumper
ME-termJump3	terminal block jumper 3
ME-termJump4	4 way terminal block jumper
ME-termJumpLg	4awg terminal block jumper
3 Fuse Holder	

NOTES:

Dairy Tech INCORPORATED

MADE IN U.S.A.

For parts list and ordering
visit www.DairyTechInc.com

You may also see the last pages of this user manual.

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